ASSESSING THE COGNITIVE FUNCTIONING OF STUDENTS WITH INTELLECTUAL DISABILITIES: PRACTICES AND PERCEPTIONS OF SCHOOL PSYCHOLOGISTS

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ABSTRACT

ASHLEY NICOLE COSTNER: Assessing the Cognitive Functioning of Students with Intellectual Disabilities: Practices and Perceptions of School Psychologists
(Under the direction of Rune J. Simeonsson, Ph.D.)

School psychologists are faced with the task of conducting evaluations of students in order to determine special education eligibility. This often equates to administering a cognitive assessment measure to obtain information about skills or abilities. Although this may be a straightforward task when working with children of average or higher intelligence, it becomes increasingly challenging as students' needs and impairments become more complex. In this study, a sample of 209 North Carolina school-based school psychologists was surveyed about their practices and perceptions related to working with students with intellectual disabilities (ID). The study aimed to answer three research questions: 1) What is the status and range of school psychologists' previous training specific to the ID student population, 2) What is the nature of current school-based school psychologists' practices related to working with students with ID, and 3) What are school psychologists' perceptions of working with this population? The results identified trends in current assessment practices of school-based school psychologists in North Carolina related to their work with students with ID. Specific areas of strength and need were identified with reference to a variety of variables including cognitive assessment tool selection and linking assessment data with other practices (e.g., developing appropriate IEP goals and collaboration with community providers), respectively. Recommendations for future training and research are provided.

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Introduction

School psychologists are uniquely qualified to provide direct comprehensive services to meet the educational, behavioral, social-emotional, and mental health needs of students. Trained in both psychology and education, school psychologists offer support to teachers, administrators, students, and families with a shared goal of achieving student growth and success. One of the numerous tasks of school psychologists involves conducting evaluations and analyzing the resulting data to assist in determining students' eligibility for special education services. This often equates to administering a cognitive or IQ assessment, among other assessments, to gain information about a student's skills or abilities. Although this may be a straightforward task for school psychologists working with children of average to above average intellectual functioning, it is far from simple and becomes increasingly challenging as students' needs become more complex.

This study aimed to clarify one of the many challenging aspects of a school psychologist's role: selecting the most appropriate tools to assess students' abilities, particularly the cognitive functioning of students who have an intellectual disability living in the state of North Carolina. The following literature review begins with an overview of intellectual disabilities and the most common approaches to assessment. A focused summary of the assessment process in North Carolina public schools is provided, in addition to commonly associated limitations and an argument for continued research and professional development in this area.

Literature Review

Evolving Terminology

Mental retardation, to some degree, was first described in Thebes, Greece in as early as 1500 B.C. (American Association on Mental Deficiency [AAMD], 1983). The concept of mental retardation was used to describe individuals who exhibited deformities in their skulls associated with retarded behavior, those with differing levels of mental acuity, and even those who were considered mentally ill. Beginning in the late 18th century, investigations took place that examined specific characteristics distinguishing those who were deemed mentally ill from those who were said to be mentally retarded (AAMD, 1983). Terms such as idiocy, feeble-mindedness, and imbecility were used scientifically for mental retardation around this time (Glidden, 2006). Down syndrome, a well-known genetic syndrome associated with cognitive deficits today, was first described in 1866 by British doctor John Langdon Down (AAMD, 1983). The development of intelligence tests in the early 1900s also introduced the idea of differentiating individuals with the disability behaviorally, rather than just medically (AAMD, 1983).

The AAMD formally recognized the term mental retardation in 1959 (AAMD, 1983). Since the organization's 1959 manual, it has become customary to view mental retardation in terms of current levels of functioning in both intelligence and adaptive behavior. *Intellectual disability* (ID) is gradually becoming the more prevalently used term for those with both an intelligence quotient (IQ) below 70 and corresponding adaptive deficits, rather than the previous term of mental retardation, which is now viewed as having a negative connotation. While there are still some countries across the world and specific organizations that do not yet use the term ID, it is used by the majority of developed countries. ID has widely replaced

the term mental retardation for medical, educational, policy, administrative, and legislative purposes, and is considered to be the term in common use by the lay public and advocacy groups (APA, 2013; Salvador-Carulla et al., 2011).

Classification Systems, Definitions, and Diagnosis

Accurate estimates of prevalence rates of ID are important for the planning and provision of services, including educational support services (Goharpey, Crewther, & Crewther, 2010). However, prevalence rates can vary depending on the classification system used. One of the most common discrepancies among classification systems is whether the individual's IQ score or their level of adaptive functioning should be the central defining characteristic of the disability (Goharpey et al., 2010).

AAIDD. The American Association on Intellectual and Developmental Disabilities (AAIDD), previously called the American Association on Mental Deficiency (AAMD) and the American Association for Mental Retardation (AAMR), is the oldest professional organization committed to the study and assistance of individuals with impaired intellectual and adaptive functioning (Weis, 2014). The AAIDD has a comprehensive definition, classification, and system of supports, which mainly focus on functioning, adaptive skills, and supports needed (Salvador-Carulla et al., 2011). The AAIDD's definition is consistent with the conceptual model proposed by the International Classification of Functioning, Disability and Health (ICF).

According to the AAIDD (2010), ID is a disability "characterized by significant limitations both in intellectual functioning and in adaptive behavior as expressed in conceptual, social, and practical adaptive skills" (p. 1). Furthermore, symptoms of the disability must be present before the age of 18 (AAIDD, 2010). Rather than categorizing

individuals by the level of intellectual impairment (e.g., mild, moderate), the AAIDD recommends that professionals describe individuals' needed supports across various areas of functioning (i.e., home living, community living, lifelong learning, employment, health and safety, social activities, and protection and advocacy) (Weis, 2014). Levels of support progress from intermittent, to limited, then extensive, and lastly, pervasive (Carr & O'Reilly, 2007). For example, an individual may be described as needing extensive educational support, but intermittent social support (Weis, 2014). Activities are ranked according to frequency, amount, and type of support needed (Weis, 2014).

The AAIDD (2010) provides five assumptions that are considered essential to the application of the organization's definition: 1) Functional limitations must be considered within the context of community environments typical of the individual's peers and culture; 2) Cultural and linguistic diversity, as well as differences in communication, sensory, motor, and behavioral factors, should be considered for a valid assessment; 3) Limitations often coexist with strengths within individuals; 4) Development of a profile of needed supports is an important purpose of describing limitations; and 5) The life functioning of an individual with ID will generally improve with appropriate supports provided over a sustained period. Three criteria must be met in order for assessment to serve its purposes for diagnosis, classification by disability aspects, and to plan for individualized supports: the assessment tools and process should match the assessment purpose, the findings should be as valid as possible, and the results should be useful and purposefully applied (AAIDD, 2010).

ICD-10. The World Health Organization's International Classification of Diseases is in its tenth revision (ICD-10). Disabilities defined by the ICD-10 follow the ICF model, which bases functioning and level of disability on several factors, including health status (e.g.,

disease), impaired bodily functions and structures, limitations in activities, restrictions for participation, barriers and hindrances in the environment, and personal or demographic factors (Carr & O'Reilly, 2007). Currently, the ICD-10, which still uses the term mental retardation, requires that there is a reduced level of intellectual functioning that results in a diminished ability to adapt to the daily demands of the normal social environment for a diagnosis. There are four intellectual levels: mild, moderate, severe, and profound. Standardized assessments are recommended, but it is noted that intellectual abilities and social adaptation may change over time, and, however poor, may improve as a result of training and rehabilitation. Furthermore, diagnosis should be based on one's current levels of functioning (Carr & O'Reilly, 2007).

In working toward a new definition for the ICD-11, the current working group for ID has proposed replacing the term mental retardation with intellectual developmental disorders, which would be defined as "a group of developmental conditions characterized by significant impairment of cognitive functions, which are associated with limitations of learning, adaptive behavior, and skills" (Salvador-Carulla et al., 2011, p. 177). Moreover, it is proposed that this new definition should fall under the larger grouping of neurodevelopmental disorders, that the subcategories of clinical severity be continued, and that problematic behaviors be changed to associated features (Salvador-Carulla et al., 2011).

DSM-5. The Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), published by the American Psychiatric Association (APA), is widely used in the United States by trained clinicians to diagnose psychological disorders, including IDD (intellectual developmental disorder). According to the DSM-5, the essential features of ID are deficits in general mental abilities and impairment in everyday adaptive functioning,

compared to others who are matched based on age, gender, and sociocultural status (APA, 2013). Onset must be during the developmental period and a diagnosis must be based both on clinical assessment and standardized testing of intellectual and adaptive functioning. A standardized score of 70 or lower on a test of intellectual functioning plus or minus five points for measurement error is necessary (APA, 2013).

There are four degrees of severity recognized: mild, moderate, severe, and profound (APA, 2013). ID also now falls under the heading of neurodevelopmental disorders, which are conditions with onsets during the developmental period (APA, 2013). The recent changes in the fifth edition better align with the proposed ICD-11 and current AAIDD terminology and definitions, as well as the Department of Education's definition.

Historically, the DSM recommended categorizing individuals into one of four subtypes (i.e., levels of severity) based on their standardized IQ score (Weis, 2014). The DSM-5 now gives equal importance to IQ and adaptive functioning (Weis, 2014). Specifiers of mild, moderate, severe, or profound are assigned on the basis of one's adaptive functioning across the conceptual, social, and practical domains, rather than one's IQ score as previously practiced, because it is adaptive functioning that determines the level of supports required and IQ measures are considered less valid at the lower end of the IQ range (APA, 2013). Based on these criteria, the overall prevalence is estimated to be approximately one percent of the general population, with severe ID (i.e., requiring extensive support and supervision at all times) occurring in approximately 6 per 1000 individuals (APA, 2013).

United States Department of Education. Although students are not diagnosed, per se, in the schools, Part B of the most recent reauthorization of the Individuals with Disabilities Education Act (IDEA, 2004) outlines 14 areas of disability under which students

between the ages of 3 and 21 can be identified. A definition for each of the 14 areas is explicitly stated, along with additional factors and requirements that must be considered when determining eligibility for special education and related services. One of the 14 areas identified by this federal legislation is ID, which changed from the term mental retardation in 2010 under Rosa's Law (Weis, 2014).

According to IDEA, ID is defined as "significantly subaverage general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period, that adversely affects a child's educational performance" (IDEA, 2004). Each state must adopt its own criteria for ID that aligns with this federal definition and meet the additional evaluation requirements for eligibility outlined in federal law (e.g., the public school agency must "draw upon information from a variety of sources") (IDEA, 2004). Additionally, the following factors must also be considered to be eligible for special education services: the child must not be determined to be a child with a disability if the determinant factor for eligibility is: 1) lack of appropriate instruction in reading, 2) lack of appropriate instruction in math, or 3) limited English proficiency (IDEA, 2004). The specific services provided under this category of eligibility vary depending on each individual student's needs and are described in each eligible student's Individualized Education Program (IEP).

North Carolina Regulations. In North Carolina, the educational definition of ID remains the same as the federal educational definition; though, it is stated that the child must demonstrate "both intellectual functioning well below the mean on an individually administered standardized intelligence test… and adaptive behavior deficits reported by the same source at or below two standard deviations below the mean in one domain or one and

one-half standard deviations below the mean in two or more domains" (North Carolina Department of Public Instruction [NCDPI], 2014, p. 69). Furthermore, the NCDPI Policies outline cutoffs for three severity levels of ID: mild (i.e., two standard deviations below the mean), moderate (i.e., three standard deviations below the mean), and severe (i.e., four or more standard deviations below the mean). The standard error of measure should also be considered when following these cutoff scores. Lastly, "the disability must have an adverse effect on educational performance and require specially designed instruction" (NCDPI, 2014, p. 69).

Based on 2012-2013 school year data, 7 percent of the students receiving special education services in public schools qualified for services under the category of ID in the United States (US Department of Education, 2013). Specific data was not reported specifying the individual severity level for these students (i.e., mild, moderate, or severe). As of April 1, 2015 in North Carolina, approximately 8.4 percent, or 16,943, of the students receiving Exceptional Children services fall under the category of ID (NCDPI, 2015a). Of those, 70 percent are in the mild range, 25 percent are in the moderate range, and 5 percent are in the severe range. While the federal IDEA legislation and North Carolina Policies' definitions of and criteria for ID again draw attention to standardized scores of IQ and adaptive skills, the educational perspective differs from those of the other organizations and codes described previously (e.g., ICD-10 and DSM-5), because the ID must impact the individual's educational performance in order for the individual to receive services.

There is still much debate among practitioners regarding the most appropriate classification system and definition for ID. While some support the current definitions which focus on standardized scores of intellectual and adaptive functioning to diagnose ID as a

disability, others insist on more of a dimensional view of human functioning that places an increased emphasis on a variety of functional aspects, such as the variations in the nature and rate of learning, in defining this phenomenon (Simeonsson, Granlund, & Bjorck-Akesson, 2006). The current classification systems have varying emphases ranging from standardized scores of intelligence and adaptive functioning, limitations and restrictions, levels of supports needed, and influences on one's learning. These differing views can be confusing for practitioners as the classification system carries different weight depending on the setting in which the practitioner is working and evaluating an individual. This is likely especially puzzling for school-based practitioners as a child could technically have a formal diagnosis, but still not be eligible for services. The reader is encouraged to keep these views in mind as this paper moves into a discussion of characteristics of individuals with ID and how those characteristics are assessed.

Characteristics of Individuals with ID

The term ID describes an extremely diverse group of individuals ranging from those with severe developmental disabilities who can require constant care to those with only mild delays who are usually indistinguishable from others in their age group (Weis, 2014). No matter the classification system used, the term ID is characterized by similar features. Unfortunately, ID can be associated with a host of other impairments, including physical disabilities, such as visual impairment, hearing loss, speech and language difficulties, seizure disorder, and cerebral palsy (Harris, 2006). In addition, comorbid psychopathology or mental health and/or behavioral disorders are also more prevalent in individuals with ID, compared to typically developing individuals (Harris, 2006). The comorbidity of

neurological, physical, and other limitations increases as the level of ID becomes more severe.

Functional skills and outcomes. These similar characteristics and frequently occurring comorbid disorders often impact individuals' functional skills and outcomes. Limitations in both general mental abilities and adaptive functioning can lead to problems perceiving and processing new information, learning quickly and efficiently, applying knowledge and skills to solve novel problems, thinking creatively and flexibly, responding rapidly and accurately, and meeting day-to-day demands in an age-appropriate manner (Weis, 2014). Since comorbidity increases as the severity level of ID increases, one can expect functional skills to generally be commensurate with the level of impairment. Thus, typically, the more impaired an individual is, the more limited their functional skills. It is important to note that, throughout one's lifespan, an individual with ID is still able to learn and improve many of their functional skills. While early intervention services, especially individualized therapeutic services, are one of the best predictors of higher functional skills, the period for learning and working on skills does not end at any particular age.

For any individual with ID, there is often a common goal among the individual, his or her caregiver(s), and his or her service providers to become as functional and independent as possible. For example, daily living, safety, or self-help skills, such as toileting, feeding one's self, bathing, and dressing, are frequently targeted with individuals with ID, especially with those in the moderate to severe range. Other functional skill areas usually emphasized in interventions for individuals with ID include communication and pragmatic skills, social or play skills, and fine and gross motor skills.

Etiology

Another important factor to consider is etiology, as it could suggest a specific cognitive profile for the individual (Harris, 2006). Knowing why an individual is experiencing challenges can assist in the evaluation process and could explain certain characteristics or limitations (e.g., has the individual always experienced these challenges or did a particular event occur that caused impairment or regression of skills). While some cases of ID can be traced back to a genetic source of origin, other cases may be the result of some other event.

Genetic origins. There are more than 500 to 750 different genetic causes of ID, the most common of which is Down syndrome (Goharpey et al., 2010; Harris, 2006). Other ID conditions that have a genetic origin include Fragile X syndrome, Prader-Willi syndrome, Angelman syndrome, Williams syndrome, and neurofibromatosis (Goharpey et al., 2010; Hurley, Levitas, Lecavalier, & Pary, 2007). While the DSM-5 indicates that males are overall more likely than females to be diagnosed with both mild and severe ID, gender ratios vary drastically across studies, especially those investigating sex-linked genetic factors (APA, 2013). For example, according to Goharpey et al. (2010) at least 95 conditions have been linked to the X chromosome, which is said to explain a prevalence ratio of 4:1 (males to females) with ID. Metabolic disorders, such as phenylketonuria, are caused by genes inherited from one's parents and are another genetic cause of ID (Weis, 2014).

Acquired ID. In about 30 to 50 percent of ID cases, a genetic etiology has not been identified (Goharpey et al., 2010). This suggests that the remaining cases are acquired as a result of some other event, such as embryonic teratogen exposure, complications during delivery, or childhood illness or injury (Weis, 2014). Teratogens, which are environmental

substances that can cause maldevelopment in a fetus, are another cause of ID. Examples include viruses acquired by a mother during pregnancy (e.g., rubella, syphilis, human immunodeficiency virus [HIV]) and toxic chemical substances, such as heroin, cocaine, and alcohol. A variety of complications during pregnancy and delivery can also be associated with ID. Anoxia (i.e., a fetus's inability to obtain oxygen for an extended period of time) is frequently associated with delivery complications and can lead to central nervous system damage and ID. The two childhood illnesses most often associated with acquired ID are encephalitis and meningitis; however, other injuries, such as traumatic brain injuries and lead toxicity, are also recurring causes (Weis, 2014).

Assessing Intellectual Disabilities

Implications for Assessment

Many classification systems, including educational policies, for individuals with ID rely solely on standardized measures of IQ and/or adaptive behavior functioning (Zucker & Polloway, 2004). Since this is the case, most would presume that IQ measures provide valid and reliable estimates of intelligence. Regrettably, some researchers say IQ scores are questionable for individuals with ID, particularly those functioning within the moderate to profound range, due to psychometric issues, such as floor effects.

As recently as the early 2000s, the Stanford-Binet, Wechsler Intelligence Scale for Children, and Kaufman Assessment Battery for Children were the most commonly administered assessments used to measure intellectual abilities (Zucker & Polloway, 2004). The AAMD Adaptive Behavior Scales, Vineland Adaptive Behavior Scales, and Comprehensive Test of Adaptive Behavior were the most commonly administered standardized measures of adaptive behavior functioning at that time. Although these

measures are among the highly preferred today, there are several scholars in the field who encourage the use of and argue the need and importance for more functionally- and behaviorally-based assessment measures, as they would likely better inform intervention services, especially in the school setting (Drew & Hardman, 2007; Zucker & Polloway, 2004).

The most significant implication for using invalid or unreliable measures to determine the IQ of individuals with ID is the limited amount of information many of these assessment tools provide. Adequate assessment approaches provide the examiner with useful information that can inform interventions. Appropriate assessments enable the examiner to note personal strengths and interests of the individual, such as what the individual finds motivating and engaging, as well as which tasks he or she is able to complete independently with success. Strategies that engage and maintain the individual's attention are likely to provide the best opportunity for learning, and will yield more valid results (Goharpey et al., 2010).

Best practices in cognitive assessment are said to come from the utilization of a systematic, comprehensive assessment and interpretation framework that integrates sound theoretical and psychometric principles with current scientific evidence (Flanagan, Ortiz, Alfonso, & Dynda, 2008). A suggested framework for school psychologists includes the following steps: 1) specification of hypotheses, 2) operationalization of theoretical domains, 3) administration and scoring of tests, 4) interpretation of results within the context of all sources of data to evaluate hypotheses and draw conclusions, and 5) linkage of results to interventions, which are monitored and adjusted as needed (Flanagan et al., 2008). Thus,

before beginning an evaluation, the school psychologist should determine which types of information he or she needs before the most appropriate tool or measure is chosen.

It is known that as the level of severity increases, the prevalence of co-occurring limitations increases. This creates one of the challenges frequently encountered when assessing individuals with severe ID: characteristics specific to the individual (e.g., physical or sensory limitations) impact his or her performance. In addition, both the examiner's level of competence and experience in the assessment of individuals with significant limitations, as well as potential psychometric problems with measures being used for unintended purposes, are concerns (Simeonsson, Bailey, Smith, & Buysse, 1995).

Approaches to Assessment

Based on the various definitions of ID, assessment, at a minimum, should include both a psychometric measure of intelligence (i.e., one that provides a standardized IQ score) and a measure of one's adaptive abilities. The particular approach, or combination of approaches, that an examiner chooses can vary. Some of the common approaches include standardized, proxy, developmental, and functional.

Standardized measures. The term standardized indicates that the measure was developed to be administered in a standardized way (i.e., following explicit guidelines). Standardized tests of intelligence measure a variety of abilities, the most customary of which are crystallized and fluid intelligence. Crystallized intelligence refers to existing knowledge or information learned throughout one's lifetime, while fluid intelligence is defined as one's ability to reason with novel information. These abilities are supported by the Cattell-Horn-Carroll Theory of Cognitive Abilities (CHC theory), which was developed by Raymond Cattell, John L. Horn, and Bissell Carroll (McGrew, 2009).

The majority of the standardized intelligence tests used today are based on CHC theory, including the Stanford-Binet 5 (SB-5), Kaufman Assessment Battery for Children - Second Edition (KABC-II), Woodcock-Johnson Tests of Cognitive Abilities - Fourth Edition (WJ-IV), Differential Ability Scales - Second Edition (DAS-II), and Wechsler Intelligence Scale for Children - Fifth Edition (WISC-V) (Flanagan et al., 2008). This theory, which is a combination of two prominent theoretical models, is one of the most recognized and influential psychometric theories of the structure of human intelligence (Flanagan et al., 2008; McGrew, 2009). In general, CHC theory suggests that there are three stratums of cognitive abilities and one's overall intelligence (stratum iii) can be explained by broad (stratum ii) and narrow (stratum i) abilities (Flanagan et al., 2008; McGrew, 2009). Thus, in addition to crystallized and fluid intelligence, there are several other abilities that are typically assessed by tools based on CHC theory including, but not limited to, short-term memory, visual processing, auditory processing, long-term storage and retrieval, and processing speed (Flanagan et al., 2008; McGrew, 2009; O'Reilly & Carr, 2007).

Some specific issues that should be considered when evaluating an obtained score on a standardized assessment include measurement error, test fairness or bias, the Flynn Effect, and practice effects (APA, 2013; Brock, 2012). No cognitive assessment is completely reliable, because it is impossible to rule out the influence of all possible variables that could impact one's performance. It is the administrator's responsibility to consider the assessment's standard error of measurement, confidence intervals for obtained scores, and any other factors that could weigh into reliability (AAIDD, 2010; Brock, 2012).

Test differences should also be considered, as significantly different results can be obtained depending on the specific assessment administered (Brock, 2012). For example, construct validity refers to whether a test actually measures what it intends to measure. Additional consideration should be given to which specific aspects of intelligence an assessment claims to measure and whether the examinee presents with any limitations that could impact his or her performance (AAIDD, 2010; Brock, 2012). Fairness of consequences of test use involves an appraisal of the outcomes or consequences of using a test with a particular group (Jacob, Decker, & Hartshorne, 2011). An example would be requiring a verbal response from an individual who has significantly limited verbal abilities (Brock, 2012).

A test is considered biased if there is evidence that it is not equally valid when used with children from differing ethnic or racial backgrounds (Jacob et al., 2011). Furthermore, if the use of a test results in a particular group being placed in inferior educational programs, it is considered biased and unfair (Jacob et al., 2011). This is one reason why standardized assessments have been at the root of some controversial court cases throughout history.

Prosecutors in these situations argued that standardized measures of intelligence were unfair or discriminatory for specific populations of individuals, most often those of minority status. Some believe this has led to the increasing estimates of ethnic disproportionality in special education, particularly under the special education eligibility categories of emotional disability, ID, and specific learning disability (Harry & Klingner, 2014; Sullivan, 2010). A recent risk ratio for African American students was 2.75, indicating that African American students were 2.75 times as likely to be designated as having an ID in the schools, compared to their peers (Harry & Klingner, 2014). Similarly, the risk ratio for Native American

students was 1.33 for the area of ID. It has been hypothesized that this could be due to the fact that there is more reliance on "clinical or professional judgment" when determining eligibility for these categories and school personnel may be unintentionally influenced by cultural misconceptions (Harry & Klingner, 2014; Sullivan, 2010). Although further discussion of this topic is beyond the scope of this study, these numbers further illustrate why, when selecting a standardized tool, several considerations are important, such as personal biases and professional competence as it relates to working with students from culturally- and linguistically-diverse backgrounds (Sullivan, 2010).

The Flynn Effect refers to research that shows IQ scores have been increasing from one generation to the next by about 0.33 points per year (Brock, 2012; O'Reilly & Carr, 2007). It is suggested that obtained IQ scores be adjusted by about 0.3 points for each year the test was administered after standardization (AAIDD, 2010; Brock, 2012). If this is not taken into consideration, overly high scores due to out-of-date test norms could result (APA, 2013). Another factor to consider is the practice effect. This can be observed when an individual is re-administered the same test within a short period of time leading to an artificial increase in his or her score (AAIDD, 2012; Brock, 2012). For this reason, it is best practice to not re-administer an assessment within a year of the previous administration (Brock, 2012).

In addition to mental abilities, the majority of the standardized cognitive measures available assess a variety of other skills, including visual, linguistic, and motor abilities (Colmar, Maxwell, & Miller, 2006; Crepeau-Hobson & Vujeva, 2012a). As previously mentioned, ID is sometimes associated with co-occurring disorders, limitations, and impairments, such as those that affect one's behavior, motivation in school or work

environments, communication skills, attention, and physical abilities (APA, 2013). These limitations and impairments, which could significantly impact how the individual is able to perform on standardized tasks, should be given attention to ensure that individuals are not penalized because of them (APA, 2013; Sattler, 2008).

Limiting the influence of certain access skills (i.e., skills that are irrelevant to intelligence, but that could influence one's performance on a test of intelligence because they interfere with one's ability to access the test) is encouraged (Kranzler & Floyd, 2013). It is recommended that examiners adjust testing administration in order to accommodate examinees with disabilities to ensure their resulting scores are valid estimates of their abilities (Crepeau-Hobson & Vujeva, 2012a). For example, if an individual is limited visually due to some degree of visual impairment or blindness, some components may be inappropriate to administer according to recommended standardization guidelines.

Additionally, if an individual has a motor impairment in their dominant hand, writing tasks will be difficult and an overall performance score could be skewed if the individual needs additional time to complete tasks. There has been little research that examines the impact of accommodations or modifications on test reliability and validity, thus results should be interpreted with caution, as the tool is not being administered in the way in which it was standardized (Crepeau-Hobson & Vujeva, 2012a). This practice of providing accommodations and modifications could potentially lead to invalid and unreliable estimates of these individuals' abilities, which not only does a disservice to these individuals, but is in violation of section 300.204 of IDEA, which states that the assessment should reflect a child's aptitude rather than his or her disability (IDEA, 2004).

In general, most standardized cognitive assessments are not appropriate for truly gauging the cognitive strengths and weaknesses of many children with ID who are in the mild range, and even more are inappropriate for assessing children with a moderate to profound ID (Crepeau-Hobson & Vujeva, 2012b). Individuals with more severe impairments are unable to be comprehensively assessed using some of the more popular standardized assessment measures (Crepeau-Hobson & Vujeva, 2012a).

The majority of the popular cognitive assessments used today still do not include a sufficient number of children with ID in their norming samples. Although norms are often limited for disability groups, some assessment publishers include special population studies that reference disability groups; however, this does not guarantee valid and reliable results when evaluating individuals from these groups. Having an insufficient number of children with ID in these assessment norming samples increases susceptibility to floor effects (Crepeau-Hobson & Vujeva, 2012b; Harris, 2006). That is, these assessment tools were originally designed for, and largely normed on, a nondisabled population (Colmar et al., 2006).

Floor effects refer to limits being set on the minimum IQ level that can be calculated for an individual. For example, if an assessment tool has a floor of 40, it is impossible to determine an accurate score for individuals functioning at that level or below (i.e., someone who likely has a severe or profound intellectual disability) (Colmar et al., 2006). This, along with the non-standardized use of tests leading to invalid results, could equate to a significant number of individuals' abilities being underestimated by standardized assessments potentially resulting in inappropriate educational placements in school settings (Crepeau-Hobson & Vujeva, 2012a).

Furthermore, Bergeron and Floyd (2013) recommend that practitioners use caution when comparing student score profiles to those often presented in assessment technical manuals for ID population groups. While these manuals often suggest that individuals with ID will have a relatively flat score profile, Bergeron and Floyd (2013) argue that it is not uncommon for individuals with ID to have some elevated scores; practitioners should be careful to not rule out an ID diagnosis or eligibility for special education services when analyzing profiles, particularly if all other information suggests otherwise. In these situations, global IQ scores (i.e., the Full Scale IQ), rather than part scores (e.g., specific index or cluster scores), should be the score emphasized in decision-making situations (Bergeron & Floyd, 2013).

Fortunately, test developers are increasingly taking these issues into consideration. Formerly, the SB-5 and the DAS-II were regarded as two of the better tools for this population because of their improved norming samples and lower limits of measurement (Crepeau-Hobson & Vujeva, 2012b; Sattler, 2008). With the newest 2014 revisions of the WJ-IV and WISC-V, there may be potentially more promise for better assessment of the mild to moderate ID population. While the WJ-IV examiner's manual and interpretive manual provide little to no information about individuals with ID, there are recommendations for accommodations that can be used with physically impaired individuals (Mather & Wendling, 2014).

On the other hand, 111 children between the ages of 6 and 16 with a diagnosis of ID were included in the norm sample for the WISC-V (Wechsler, 2014). Of the 111 children, 74 were diagnosed with mild ID, while 37 were diagnosed with moderate ID. Mean subtest, process, and composite scores were compared between children with ID and their

corresponding matched control groups. Results from these comparisons suggest evidence that the WISC-V produces scores that are useful in the assessment of ID within the mild to moderate range (Wechsler, 2014).

The Comprehensive Test of Nonverbal Intelligence - Second Edition (CTONI-2) and the Bayley Scales of Infant and Toddler Development - Third Edition (Bayley-III) have also been noted as measures that could be useful for children with ID who have coexisting severe verbal or motor impairments or with younger children, respectively (Crepeau-Hobson & Vujeva, 2012b). The Intelligence Test for Visually Impaired Children (ITVIC) and the Cognitive Test for the Blind (CTB) have been found to have adequate reliability and validity for children with blindness or visual impairment (Crepeau-Hobson & Vujeva, 2012a). With specific regard to children who are deaf or hard of hearing, the DAS-II, KABC-II, and SB-5 provide information on clinical studies conducted with this population.

Furthermore, many of the nonverbal tests of intelligence on the market (e.g., Universal Nonverbal Intelligence Test - Second Edition [UNIT], Leiter International Performance Scale - Third Edition [Leiter-3], and C-TONI-2) may be appropriate for children who have hearing, language, and/or motor impairments, as these tools place less or no emphasis on the verbal presentation of material and these tools generally only require pointing to respond, rather than a verbal response from the examinee. However, these assessments obviously assess a more limited range of abilities and many of them do not have psychometric properties or norms for these disability groups available, so results should be interpreted with caution (Crepeau-Hobson & Vujeva, 2012a; Crepeau-Hobson & Vujeva, 2012b; Kasari, Brady, Lord, & Tager-Flusberg, 2013).

Goharpey et al. (2010) suggest that the nonverbal visual matching Raven's Progressive Matrices (RPM) should replace the frequently used WISC-IV measure of intelligence, because it is a better measure of the reasoning abilities of children with ID who invariably have verbal deficits. These authors note that deficits in working memory are likely the root of the cause for the difficulties that children experience on RPM because working memory could affect their problem solving abilities. More specifically, children with low functioning autism, Down syndrome, and idiopathic ID use different problem-solving strategies compared to typically developing children (Goharpey et al., 2010).

According to a large survey conducted in the late 1990s by Riccio, Houston, and Harrison (1998), school psychologists use standardized, norm-referenced measures at all grade/age levels. Up to 40 percent of those surveyed reported using alternative methods; however, these were most commonly employed at the preschool level. Kranzler and Floyd (2013) developed a useful checklist tool that has questions practitioners should consider when conducting assessments to determine a diagnosis of ID or eligibility. Key components of the checklist include questions related to test validity and reliability of assessment tools used and consideration of other issues, such as comorbid diagnoses that could explain one's symptoms of ID (Kranzler & Floyd, 2013). There is some controversy in the literature regarding the use of norm-referenced assessment tools, particularly in the absence of other information, such as naturalistic observations (Riccio et al., 1998).

Proxy assessment. Another popular assessment approach used with individuals with ID is proxy assessment. This method typically involves an interview with a parent or caregiver of an individual with ID. The parent or caregiver serves as the informant who responds to questions from an examiner about the individual. Usual questions include those

related to the individual's ability to independently complete daily living activities and other functional tasks. Interviews range from very structured to somewhat informal, depending on whether a specific assessment tool is used to guide the interview or if the examiner is simply attempting to gain background information on the individual. The Developmental Profile - Third Edition (DP-3), Adaptive Behavior Assessment System - Third Edition (ABAS-3), and Vineland Adaptive Behavior Scales - Second Edition (Vineland-II) are examples.

It is not uncommon for multiple informants to be used in the assessment, such as parents, teachers, or service providers, to enable the examiner to have a global or comprehensive understanding of the individual's abilities across settings. This is an especially routine practice in the school setting, as students are often asked to perform very different tasks at school and may respond to different levels of support from service providers in that setting. Unfortunately, one important limitation with proxy assessment involves considerations of factors that may influence ratings and lead to possibly invalid or unreliable results, such as how well the rater knows the individual, how impaired the individual is due to their disability, and subjectivity among raters (Milasinovic & Buchanan, 2013). Parent or caregiver report measures, nonetheless, can provide valuable information, especially regarding how the individual performs across varied conditions.

Developmental approach. Use of a developmental model enables an examiner to determine where an individual is functioning developmentally by investigating skills that follow a typical developmental progression (e.g., month-by-month from birth). Within this approach, measures that produce age equivalences for a variety of skills are utilized. There are different developmental assessments available, some of which provide a standardized score, while others are more informal and are generally administered for the purpose of

gathering observational information. For example, an individual may be presented with tasks that require him or her to visually track an object, grasp an object using a specific type of grasp, or sort a series of objects.

These developmental assessments are ordinary practice for those working with young children below the age of five. Oftentimes, examiners will administer these assessments, which are intended for younger children, in order to address the floor problems mentioned earlier that could result from standardized norm-referenced measures (Riccio et al., 1998). Developmental approaches are especially useful for individuals of any age within the moderate to profound range, as specific age equivalents can be obtained. Information gathered from the assessment can be used to develop individualized, developmentally-appropriate interventions focusing on a variety of developmental goals related to tasks such as feeding, toileting, talking, walking, and more. Unfortunately, this is not always psychometrically appropriate, as these tools usually have not been normed with individuals above the preschool age. Yet, research has shown that this approach is the most common in determining special education eligibility for those with severe ID within the school setting (Riccio et al., 1998).

Functional approach. Examiners often appreciate the utility of a functional approach to assessment with individuals with ID. A functional assessment approach can be defined as one that focuses on basic aspects of an individual's functioning, rather than on etiology, diagnostic features, or developmental milestones (Simeonsson et al., 1995). Generally speaking, functional assessments measure certain characteristics along a continuum of abilities/disabilities, rather than indirect inferences about deficit or disorder (Simeonsson et al., 1995). While some choose to use standardized measures to assess the

functional skills of individuals, others may choose to utilize a non-standardized approach, such as by observing the performance of an individual across structured and unstructured situations.

One example of the latter could include a clinical observation of how an individual behaves during snack time (e.g., does the individual feed him or herself, is he or she able to use utensils functionally, is he or she able to indicate that he or she would like more of something or that he or she does not like something). These skills give the examiner insight into the individual's level of communication and motor functioning. Another example could involve placing a child in an unstructured play situation and noting how he or she manipulates items, such as books, cause and effect toys, and other objects. Results obtained solely from observations in only one setting could be less reliable due to variables such as possible anxiety experienced by the individual or poor rapport established with the examiner during the evaluation (Kasari et al., 2013).

There are a variety of measures that assess domains of functional skills, such as the ABILITIES Index (Simeonsson et al., 1995). The ABILITIES Index is based on the conceptual framework of the ICD supported by the World Health Organization and focuses on the domains of audition, behavioral/social skills, intellectual functioning, limbs, intentional communication, tonicity, integrity of health, eyes, and structural status, each of which contribute to the acronym name for the tool. This measure was originally developed to serve as a method for determining special education eligibility status (Simeonsson et al., 1995).

Another example is the Supports Intensity Scale (SIS), which is a standardized instrument that is used to evaluate individuals' needed supports across seven life activity domains, in addition to medical and behavioral supports that may be needed (AAIDD, 2010). This tool, which is published by the AAIDD, emphasizes individuals' needs for supports and data can lead directly to individualized goals for intervention (AAIDD, 2010). Rather than simply identifying the fact that a student meets criteria for ID eligibility, as with traditional assessment approaches, a functional approach is typically individually-focused and allows for more tailored interventions that take advantage of an individual's strengths in order to address his or her needs.

There are pros and cons for each of the approaches discussed. It is up to the examiner to select the best approach, or combination of approaches, to address the purpose of the assessment. While some tools may be necessary because they provide a standardized score, it is important that the examiner considers whether that approach is useful. If not, a different tool may provide more meaningful data for goals and intervention planning. Additionally, other considerations, such as the individual's level of functioning, may help to determine the usefulness of one tool over another.

School-Based Assessment in North Carolina

Diagnosis versus eligibility for special education. As previously discussed, students with ID are not formally *diagnosed* in the schools, but determined to be eligible or not eligible for special education services based on disability status, as defined by federal legislation and state policies. In order for this determination to be made, a valid standard score must be obtained for both intellectual ability and adaptive functioning. Based on the earlier section presenting challenges to assessment, obtaining a valid standard score may

prove to be quite challenging for some individuals. Use of a variety of approaches to assessment is likely the most appropriate strategy. At the very least, the data obtained could be used as supplemental information to provide evidential support for conclusions drawn about the individual's abilities and functioning and offer guidance for IEP goals, interventions, and transition planning.

Federal guidelines explicitly state several evaluation procedures regarding specific assessment practices. For example, public agencies must "use a variety of assessment tools and strategies to gather relevant functional, developmental, and academic information about the child…" when determining eligibility (IDEA, 2004). In addition, public agencies must "not use any single measure or assessment as the sole criterion for determining whether a child is a child with a disability and for determining an appropriate educational program for the child" (IDEA, 2004). Federal guidelines also indicate that the assessment tools utilized should be valid and reliable; should assess specific areas of educational need, rather than just providing a general intelligence quotient; and should ensure that if an individual has impairments, the assessment results accurately reflect the factors the test purports to measure, rather than reflecting the child's impairments (IDEA, 2004).

Although IDEA currently still mandates the use of standard scores to determine eligibility for the area of ID, scholars note that it is best practice for assessment to also serve the purpose of identifying both strengths and weaknesses of the student (Riccio et al., 1998). Sattler (2008) concluded that practitioners should be careful to avoid placing too much emphasis on IQ scores, and instead consider the whole child. This becomes increasingly important as the student's level of impairment increases. This information is crucial to the development of individualized interventions across all functional skill areas, particularly

those related to communication, motor, and adaptive skills (Riccio et al., 1998). Assessment information can also inform behavioral interventions for students with ID who exhibit challenging behaviors. This additional information about strengths and weaknesses can be obtained by using developmental and functional tools in conjunction with standardized, norm-referenced measures.

Fortunately, it is an increasingly traditional practice in schools to utilize a student-centered approach to evaluation among members of the IEP team, which promotes more transdisciplinary collaboration among team members. A holistic, person-centered approach, such as this, is especially recommended with individuals functioning in the profound intellectual disability range (Carnaby, 2007).

With specific regard to summarizing results, Nalven (2004) stated that school psychologists' reports should discuss patterns of assets and/or deficits that teachers may use to design instruction. The school psychologist's report should discuss areas of strength and weakness for the student in the areas of intellectual, adaptive, social and emotional, and educational functioning. Assessments that go beyond the sole purpose of classification and emphasize an individual's needs immediately open up the possibility for specific intervention and support strategies (Colmar et al., 2006). Unfortunately, Nalven (2004) added that recommendations can only be as valid as the assessments and observations upon which they are based. It is best practice for a student's teacher to meet one-on-one with the school psychologist to discuss the student's performance and ideas for individualized interventions. Finally, Nalven (2004) indicated that one additional step involves periodic follow-up conferences between the teacher and school psychologist to discuss student progress with the intervention so that success can be maximized.

Statement of the Problem

As the previous review suggests, the evaluation of students with ID is no easy task for school psychologists. Training in the area of ID and understanding of the importance of an appropriate assessment is essential. To add to the challenge, there is not a consensus in the field regarding the definition of ID and assessment approaches vary in their validity and reliability, thus practicing school psychologists may have difficulty when evaluating the appropriateness of assessment tools for students with ID.

Limited Training

Although all school psychology graduate students are thoroughly trained in theories of intelligence and assessment practices, specific training opportunities with individuals with ID are often scarce in training programs. Graduate students are likely exposed to cases involving students or clients with ID while serving as practicum students or interns; however, depending on the setting and hours of experience, useful practical experience may be limited with individuals with low incidence disabilities. Additionally, discussion of case examples that involve additional complexities, such as students being evaluated for ID eligibility who are from culturally- or linguistically-diverse backgrounds, is another area that is easily missed in training (Jasper & Bouck, 2013). In many programs, more emphasis is currently on other topics within the field of school psychology, such as multi-tier systems of supports for students who may have a learning disability, behavior modification or counseling techniques for students with mental health concerns or skill deficits, and consultation models to use with colleagues and parents. While these other topic areas within the field are very important, it is unfortunate that the topic of working with individuals with ID, particularly those within the moderate to profound range, is generally not an area of high focus in current

graduate school psychology training programs. Addressing best practices in this area is essential because graduate students planning to work in the public school system, and most other settings, will likely work with individuals with ID at some point in their careers.

Federal and State Support for Standardized Approaches

According to current federal education law (i.e., IDEA) and NCDPI policies, subaverage intellectual functioning and adaptive behavior deficits must be documented for special education eligibility. Thus, a standardized assessment approach is the most preferred (i.e., one that will yield a standard score). Although this is the most preferred approach, it does not mean it is also the most useful for determining which types of goals and services (i.e., interventions) the individual needs. In other words, solely using standardized, norm-referenced measures tends to provide limited meaningful information that can be used for educational and treatment planning and programming for individuals with ID (Crepeau-Hobson & Vujeva, 2012a). Use of a combination of assessment approaches is necessary to effectively evaluate the abilities of individuals with ID (Colmar et al., 2006). Once a valid and reliable assessment is completed, appropriate goals can be developed to meet the individual's needs.

The Present Study

Rationale

The mission of the Exceptional Children (EC) Division of NCDPI is "to ensure that students with disabilities develop intellectually, physically, emotionally, and vocationally through the provision of an appropriate individualized education program in the least restrictive environment" (NCDPI, 2015b). Collecting and analyzing valid information about a student is the first step necessary for school psychologists, other school staff, and each

student's family to determine eligibility for EC services, and if needed, to develop an appropriate IEP for the student.

While the prevalence of students with ID, particularly at the moderate to profound level, is somewhat small compared to the prevalence of other disability areas in the schools, it is still imperative that school psychologists are well-trained to conduct appropriate evaluations that will meet the complex needs of these students. Relying solely on standardized, norm-referenced assessment data may limit the identification of individual student strengths and weaknesses that can be utilized in the development and implementation of appropriate interventions (Riccio et al., 1998).

Research Questions

The overall aim of the present study was to investigate trends in current assessment practices of school-based school psychologists who work with students with ID in the state of North Carolina. The identification of trends in practice also yielded a description of areas of strength and need for school psychologists in this area of assessment. As this was the first known study to date investigating the assessment practices of school psychologists in North Carolina with regard to the population of students with ID, analyses were descriptive and exploratory in nature.

This study involved the dissemination of a survey to school-based school psychologists currently practicing across the state of North Carolina to answer three research questions: 1) What is the status and range of school psychologists' previous training specific to the ID student population, 2) What is the nature of current school-based school psychologists' practices as they relate to working with students with ID, and 3) What are the self-rated perceptions of school psychologists who work with this population of students?

The first research question was designed to include information related to whether or not school psychologists reported that they had received training specific to students with mild, moderate, and/or severe ID, and if so, what type of training they received.

The second question investigated how many students with ID the school psychologists worked with and how frequently the school psychologists were involved in IEP meetings for students with ID. In addition, a number of questions were asked concerning assessments administered to the students. Respondents were asked to indicate which type of assessment approach best aligned with the way they believed students with ID should be assessed, as well as the three most common accommodations used while testing students with ID. Across a series of questions, respondents were asked to indicate their top three preferred cognitive assessment tools with regard to usefulness, confidence administering, and confidence interpreting with the mild, moderate, and severe ID student populations. These questions also allowed for an investigation of the extent to which the school psychologists' assessment practices with the ID population informed the different components of the evaluation process. More specifically, school psychologists were asked about the evaluation process components of pre-assessment collaboration with other professionals, report writing, IEP goal/intervention recommendations, post-assessment collaboration, and communication and/or involvement with community resources.

The third research question assessed a variety of school psychologists' self-ratings to explore the perceptions of school psychologists as they related to working with students with ID. School psychologists were asked to rate how knowledgeable they felt about the practice of assessment with students with ID, how comfortable they felt when assessing students with ID, and how effective they felt when assessing students with ID. They were also asked to

rate how prepared they felt when engaging in assessment activities with students with ID. Specific assessment activities included collecting assessment data from multiple sources, conducting comprehensive assessments, using data to develop and/or recommend interventions, collaborating with others about the student, and using current research to develop IEP goals. Furthermore, self-ratings were evaluated to determine whether they differed as the severity level of the student's ID increased. Finally, relationships were examined between the variables in these three questions, such as, "Is there a link between these different variables and whether or not the school psychologist had received specific training in the area of ID?"

Method

Participants

The recruitment of participants for the study was facilitated by the NCDPI Consultant for School Psychology who emailed a cover letter with the web-based survey link to all NCDPI district lead school psychologists for distribution to school psychologists in their districts. Current members of the North Carolina School Psychology Association (NCSPA) also received the survey from the organization's membership chair. There were 781 school psychologists employed by NCDPI during the 2013-2014 school year. A completion rate of 28 percent of the total number of school psychologists employed by NCDPI was obtained (*n* = 209). Thus, the participants in this study were 209 school-based school psychologists currently working in the state of North Carolina, including some who worked part-time or on a contractual basis. Of those who responded to the demographic survey questions, there were 187 (93 percent) females and 15 (7 percent) males. The sample was 92 percent Caucasian (*n*

= 186), 5 percent African American (*n* = 10), 1.5 percent multi-ethnic (*n* = 3), 1 percent Hispanic (*n* = 2), and 0.5 percent Asian (*n* = 1).

The majority of the sample (i.e., 99 percent of respondents) indicated that they were currently employed by the public school system, with two respondents indicating that they worked in a specialized setting (e.g., a residential school). Additionally, of those, 95 percent (*n* = 192) were employed at least 10 months of the year, while the remaining five percent indicated part-time (*n* = 6), contract (*n* = 2), or student status (*n* = 2). Based on the NCDPI regions, almost half of the respondents reported working in regions three (25.2 percent) and six (17.8 percent). These regions also have the two largest cities and largest public school systems in the state. Regions four, five, and eight had the next largest response rates, respectively. The remaining regions represented less than one-fourth of the total sample. Table 1 presents a detailed description of the regions in which respondents were employed, along with the actual percentage of NC school psychologists employed in each region.

Table 1

NCDPI Regions Where Participants were Employed

NCDPI Region	Total of Sample (n = 202) (n)	Percentage of Sample (%)	Actual Percentage Employed by NCDPI (%)
Region One	10	5%	4.3%
Region Two	16	7.9%	9.0%
Region Three	51	25.2%	27.4%
Region Four	25	12.4%	6.5%
Region Five	23	11.4%	17.2%
Region Six	36	17.8%	22.5%
Region Seven	20	9.9%	5.3%
Region Eight	21	10.4%	7.8%

Almost half of the respondents indicated 10 or less years of experience, with just over one-fourth of the participants reporting having worked for 5 or less years and slightly less than one-fourth reporting 6 to 10 years of experience. Additionally, less than 35 percent of the participants reported greater than 15 years of work experience. Table 2 presents a detailed description of the years of work experience of the school psychologists in the study.

Table 2

Respondents' Years of Work Experience

Years of Experience	Total of Sample (n = 201) (n)	Percentage of Sample (%)
5 or less	53	26.4%
6 to 10	47	23.4%
11 to 15	31	15.4%
16 to 20	24	11.9%
21 to 25	22	10.9%
26 to 30	16	8%
Over 30	8	4%

Most participants (88 percent) held a school psychology license with NCDPI. Those who reported that they did not currently hold this license either worked solely as contract employees with NCDPI during the 2014-2015 school year (i.e., as a Licensed Psychological Associate or Licensed Psychologist under the North Carolina Psychology Board) or chose not to respond to this question. About half of the respondents reported belonging to one or more school psychology-related organization (e.g., the National Association of School Psychologists [NASP] or NCSPA). Almost half of the respondents also indicated that they held national certification. Those that held additional licenses or certifications represented a small minority of those surveyed. Table 3 presents a detailed description of the credential

and membership status of participating school psychologists. Note that percentage sums may total more than 100 percent because respondents could choose more than one response.

Table 3

Respondent Credentials and Memberships

Credentials/Memberships	Total of Sample (n = 209) (n)	Percentage of Sample (%)
NCDPI School Psychology License	184	88%
NASP Member	99	47%
NCSPA Member	97	46%
National Certification	90	43%
NCDPI Approved Provider	34	16%
Licensed Psychological Associate	24	11.5%
Health Services Provider	19	9%
Licensed Psychologist	9	4%
NCDPI Teaching License	8	4%
NCDPI School Counselor License	4	2%
Board Certified Behavior Analyst	2	1%
NCDPI Special Education Certification	1	<1%
Registered Occupational Therapist	1	<1%

The majority of those surveyed (86 percent) primarily served elementary school students (i.e., 6 to 11 years of age). Additionally, slightly over half of those surveyed (54 percent) served middle school or immediate school students (i.e., 12 to 14 years of age). Seventy-four percent of those who responded indicated that they served more than one age group during the 2014-2015 school year. Table 4 presents a detailed description of student populations served by participants. Note that percentage sums may total more than 100 percent in that respondents could indicate that they served more than one group.

Table 4

Student Populations Primarily Served by Participants

Student Population	Total of Sample (n = 209) (n)	Percentage of Sample (%)
Pre-kindergarten (birth to 5 years)	64	31%
Elementary (6 to 11 years)	180	86%
Middle/Intermediate (12 to 14 years)	113	54%
High School or Transition	84	40%

Procedure

All participants completed the "North Carolina School-Based School Psychologists: Assessment Practices Survey" (Appendix B). Upon clicking on the web-based survey link, participants viewed an introduction to the survey, which provided information about

voluntary participation in the study (Appendix A). Information in the introduction included the purpose of the study, details about protection of anonymity, and contact information for the researcher. A statement notifying participants about the opportunity to enter their names into a raffle for one of six $25 Visa gift cards was also included in the introduction as an incentive for participation in the study.

Measure

The survey was created using Qualtrics, an online survey platform, and contained both close-ended and open-ended questions. The first section yielded demographic variables for analysis, including gender status, ethnicity status, type of work setting, employment status, work region, level of highest degree earned, licensees and credentials held, years of experience, and typical age group(s) served. In addition, variables related to work practices were generated, such as the amount of time spent performing different activities, frequency of professional development participation, and organization membership.

The second section consisted of questions related to general assessment practices, including the types of assessment measures the school psychologists completed most of the time and the test attributes that most often factored into administration decisions. Section three consisted of questions measuring participants' understanding of and familiarity with students with ID. Additional items included questions related to previous training participation, the approximate number of students with ID each school psychologist had served during the 2014-2015 school year, and how frequently each school psychologist was involved in the development of IEPs for students with ID.

The fourth section of the survey consisted of questions that specifically related to assessment practices with students with ID. Questions in the form of self-ratings assessed how knowledgeable, comfortable, and effective the school psychologists felt when assessing students with ID. Other items focused on which assessment approach of those presented best aligned with the school psychologists' understanding of how students with ID should be assessed and which cognitive tools the school psychologists felt: 1) were the most useful, 2) the most confident administering, and 3) the most confident interpreting across the different severity levels of ID. Section four also included questions regarding the three most common accommodations or modifications used by school psychologists when testing students with ID. At the end of this section, there were questions investigating the extent to which assessment practices with students with ID informed various aspects of evaluation, and the extent to which school psychologists felt prepared to engage in various assessment activities with students with ID.

Section five provided an opportunity for participants to identify any ideas or suggestions they thought could be useful for future research and professional development regarding the assessment of students with ID. Next, section six displayed a brief note about submitting survey responses. The note reminded each participant that he or she would be prompted with the option to enter his or her name to participate in a lottery for a chance to win one of six $25 Visa gift cards. Contact information was provided in the event that participants had questions for the author of the study. Lastly, section seven provided the lottery participation instructions and a space for the participant to enter his or her name and contact information. Upon closing of the survey, names from those voluntarily provided for the $25 Visa gift card lottery were randomly selected and issued a Visa gift card. Survey

data were automatically exported into an SPSS data file and kept confidential in a password-protected file utilized only by the study investigator. Data from the survey were analyzed using the PASW Statistics 18 software program.

Ethical Review

The study was submitted to the University of North Carolina at Chapel Hill Institutional Review Board for approval prior to being conducted.

Analysis

In that the purpose of the study was to investigate the assessment practices of school psychologists in North Carolina with regard to the ID population, analyses took the form of descriptive and associational statistics. Preliminary analyses included descriptive statistics, such as frequency counts describing demographic information provided (i.e., gender, ethnicity, work setting, employment status, work region, highest degree earned, licensees and credentials held, years of experience, and typical age group(s) served). Additional descriptive statistics were used to describe participant practices, including generic practices (e.g., amount of time spent performing different activities, frequency of professional development participation, and organization membership). Population-specific practices with students with ID were also of interest (e.g., previous training participation, the approximate number of students with ID school psychologists had served during the 2014-2015 school year, how frequently school psychologists were involved in the development of IEPs for students with ID, and self-ratings of how knowledgeable, comfortable, and effective they felt when assessing students with ID).

Correlational analyses were also conducted to examine relationships between respondents' self-rated knowledge, comfort level, and effectiveness as they related to assessing students with ID. Multiple non-parametric, Mann-Whitney *U* tests were run to investigate differences between respondents who reported that they had received specific training related to ID and those who reported that they had not received specific training. Specific differences in the number of students with ID with whom respondents had worked, how frequently respondents' self-reported involvement in the development of IEP goals for students with ID, and in respondents' perceptions (i.e., how knowledgeable, comfortable, and effective they felt) when assessing students with ID were investigated.

Results

This study posed three main questions investigating the characteristics, practices, and perceptions of school psychologists in North Carolina serving students with ID. The first question focused on the status and range of school psychologists' previous training specific to the ID student population. The second question examined the nature of current school-based school psychologists' practices as they related to working with students with ID. The third question addressed school psychologists' self-rated perceptions when working with this population of students. Examination of the questions was based on the analysis of data gathered using the web-based survey described earlier.

Status and Range of Previous Training Related to ID

Responses to the first research question relating to the status and range of previous training indicated that most of the respondents (47 percent, $n = 99$) participated in general continuing education/professional development "some of the time," while 38 percent ($n = 80$) reported participating "often." Eighty-six percent of respondents ($n = 179$) participated for

the purpose of keeping up with assessment practices. Other common reasons for participation included meeting licensure continuing education requirements (81 percent, *n* = 170), keeping up with intervention practices (80 percent, *n* = 167), meeting NCDPI requirements (74 percent, *n* = 154), keeping up with state policies and procedures (69 percent, *n* = 144), and meeting district or school system requirements (54 percent, *n* = 112).

With regard to previous training specific to students with ID, 77 percent of respondents indicated that they had received training for mild ID, while 16 percent (*n* = 34) indicated no previous training for this student population. With regard to moderate ID, 64 percent of participating school psychologists indicated previous training, while 29 percent (*n* = 61) indicated no training. Lastly, 54 percent reported having received training specific to students with severe ID, while 40 percent (*n* = 83) indicated no previous training for this population. Just below seven percent of the respondents (*n* = 14) chose not to respond to any questions about previous training experience specific to students with ID.

Participants were asked to identify all previous training experiences related to their preparation to serve students with different levels of ID. The majority of the training experiences reported by school psychologists working with students with mild ID were in the form of one or more graduate school course (69 percent) or conference presentations or sessions (42 percent). Of those who indicated previous training for students with mild ID, 64 percent reported participating in more than one type of training (e.g., graduate course and a specialized practicum/internship experience).

Types of training were in the same form for school psychologists working with students with moderate ID; however, the percentage of reported training experiences was lower overall. Similarly, 57 percent of those who received training for students with

moderate ID indicated more than one training experience. Reported training experiences related to the assessment of students with severe ID most often consisted of a graduate course. Slightly over half (i.e., 51 percent) of those who received previous training for severe ID participated in more than one type of training experience. Table 5 presents a description of the nature and distribution of previous training experience of school psychologists specific to students with ID. Note that percentage sums may total more than 100 percent in that respondents could indicate that they participated in more than one type of training experience.

Table 5

Training Experiences of School Psychologists with Reference to Student Level of ID

Type of Training	Total of Sample (n = 195) (n)	Percentage of Sample (%)
Previous Training for Mild ID	161	77%
Graduate school course(s)	145	69%
Conference presentation or session	88	42%
Previous Training for Moderate ID	134	64%
Graduate school course(s)	113	54%
Conference presentation or session	51	24%
Previous Training for Severe ID	112	54%
Graduate school course(s)	89	43%
Conference presentation or session	31	15%
Local district training	31	15%
Workshop	30	14%

In that some school psychologists worked with students at more than one severity level of ID, follow-up cross tabulations were carried out to examine summary values across groups. The results revealed that slightly over half of the respondents (51 percent, *n* = 107) indicated previous training for all severity levels of ID (i.e., mild, moderate, and severe). Thirteen percent of the respondents (*n* = 28) indicated training for students with mild ID only, while an additional 11 percent of the respondents (*n* = 24) reported training with mild and moderate ID only. Furthermore, 14 percent of the respondents (*n* = 30) reported no previous training with any severity level of ID.

When asked if they were interested in accessing and/or utilizing resources specific to the practice of assessing students with ID in the schools, 92 percent of respondents indicated interest in one or more resource. Almost half (48 percent, *n* = 100) preferred a webinar discussing recommended practices, 40 percent (*n* = 84) were interested in attending a presentation at an NCSPA conference, and another 40 percent (*n* = 84) indicated interest in an executive summary or abstract of the current study upon its completion. Only eight percent (*n* = 17) indicated that they were not interested in additional resources related to assessing students with ID.

In summary, the results indicate that while most of the participants reported participating in continuing education only "some of the time," one of the main purposes of participating was to keep up with assessment practices. The training experiences of participants were found to be indirectly related to the severity level of ID of students; that is, specific training in the area of severe ID was much less common among participants compared to specific training in the area of mild ID. Training experience was most often obtained while participants were in graduate school, while some participants indicated that

they had attended a conference presentation or session to gain knowledge about the ID student population. However, participants indicated that they were generally interested in furthering their knowledge in this area by attending a webinar or conference presentation or by reading an executive summary or an abstract that outlined results.

Nature of Current Practices Related to Students with ID

With reference to current practices of school psychologists, most of those surveyed (72 percent) indicated that they spent the majority of their time during the 2014-2015 school year conducting assessments or testing. Consulting with staff and parents was ranked as the second most common activity during the 2014-2015 school year by 68 percent of respondents (n = 143). Forty-two percent (n = 88) of the respondents indicated that counseling students came in third, and leading professional development was ranked as the fourth most common activity.

When asked to rank types of assessment according to the amount of time spent on each during the 2014-2015 school year, most respondents (56 percent, n = 117) ranked cognitive assessments as the most time consuming. Educational/achievement assessments were ranked as the second most time consuming (35 percent, n = 73) and adaptive and social/emotional assessments were ranked as the third and fourth most time consuming (45 percent, n = 94; 35 percent, n = 73, respectively). Curriculum-based assessments were ranked as the least time consuming (65 percent, n = 135).

Respondents were asked to rank the factors most important to them when considering which particular assessment to administer. Response choices included psychometric properties (e.g., validity and reliability), normative group, and convenience of administration. Almost half of the respondents (48 percent, n = 100) ranked psychometric properties as the

most important factor. The normative group of the assessment tool was ranked as the second most important factor by 36 percent of respondents (n = 75), while convenience of administration was ranked as the third most important factor by 39 percent of respondents (n = 81).

To quantify the number of students with ID with whom respondents had worked during the 2014-2015 school year, they were asked to select a category of numbers from a pull-down menu for each severity level. Most school psychologists (i.e., 59 percent) indicated working with five or less students with mild ID during the 2014-2015 school year. With regard to students with moderate ID, 42 percent of school psychologists reported working with only one or two students. In terms of the number of students with severe ID with whom they worked, 51 percent of respondents reported zero students for the 2014-2015 school year. Table 6 provides a detailed description of the number of students with ID with whom respondents worked during the 2014-2015 academic year.

Table 6

Number of Students with ID with Whom Respondents Worked in 2014-2015

Number of Students	Total of Sample (n = 193) (n)	Percentage of Sample (%)
Mild ID		
Did not work with any students	7	3.3%
Worked with 1 to 2 students	36	17.2%
3 to 5 students	87	41.6%

6 to 10 students	35	16.7%
11 or more students	28	13.4%
No response	16	7.7%
Moderate ID		
Did not work with any students	43	20.6%
Worked with 1 to 2 students	88	42.1%
3 to 5 students	41	19.6%
6 to 10 students	14	6.8%
11 or more students	7	3.3%
No response	16	7.7%
Severe ID		
Did not work with any students	106	50.7%
Worked with 1 to 2 students	59	28.2%
3 to 5 students	23	13.9%
6 to 10 students	2	1%
11 or more students	3	1.4%
No response	16	7.7%

School psychologists were asked about several specific assessment-specific practices. With regard to school psychologists' involvement in the development of IEP goals for students with ID, 41 percent (n = 86) of the participants reported that they were "occasionally" involved in the development of IEP goals and 27 percent (n = 57) reported that they were "rarely" involved. However, slightly over 59 percent (n = 124) indicated that

they felt "very much" prepared to collect data from multiple sources when planning and implementing assessments with students with ID. Additionally, 56 percent (n = 117) felt "very much" prepared to conduct comprehensive assessments to identify eligibility for educational services and almost 45 percent (n = 93) felt "very much" prepared to consult and collaborate at the individual, family, and systems levels about the student. Respondents reported a lower feeling of preparation with regard to using assessment data to recommend evidence-based interventions ("very much," 34 percent, n = 70; "some," 34 percent, n = 70), and using current research on learning and cognition to develop appropriate IEP goals ("some," 40 percent, n = 83).

School psychologists, in general, are trained to use a variety of assessment approaches. When respondents were asked about their most preferred approach for students with ID, there was some variability among responses. A traditional, norm-referenced approach was ranked first by 34 percent (n = 72) of the respondents. A functional approach was ranked as the second most preferred approach by 33 percent (n = 69) of respondents. Twenty-one percent (n = 43) of respondents ranked a developmental approach as their third most preferred assessment approach. Proxy approach (i.e., a parent or caregiver completing a form or interview) was ranked as the least preferred approach by almost 35 percent (n = 73) of respondents.

School psychologists were asked to rank cognitive assessments according to usefulness with students with ID. The DAS-II, WISC-IV, and SB-5 were ranked as the three most useful cognitive assessment tools for students with mild ID. The DP-3 was indicated as an additional preferred tool for the moderate ID student population. Participating school psychologists also ranked these four tools highest, along with the Reynolds Intellectual

Assessment Scales (RIAS), when asked which tools they felt most confident administering and interpreting with the mild and moderate ID student populations. In comparison, the DP-3, Bayley Scales of Infant Development, Second Edition (BSID-II), and DAS-II were ranked as the three most useful tools for students with severe ID. Participating school psychologists also indicated feeling the most confident administering and interpreting these three tools with the severe ID student population. Table 7 presents a detailed description of participants' preferred cognitive tools. Note that percentage sums may total more than 100 percent in that respondents could indicate more than one cognitive tool.

Table 7

List of Cognitive Assessment Tools Preferred by School Psychologists

	Most Useful		Most Confident Administering		Most Confident Interpreting	
Assessment Tool	Total of Sample (*n*)	Percentage of Sample (*%*)	Total of Sample (*n*)	Percentage of Sample (*%*)	Total of Sample (*n*)	Percentage of Sample (*%*)
Students with Mild ID						
DAS-II	161	77%	134	64%	116	56%
WISC-IV	82	39%	91	44%	80	38%
SB-5	76	36%	54	26%	50	24%
WISC-V	62	30%	29	14%	21	10%
KABC-II	53	25%	38	18%	32	15%
BSID-II	43	21%	17	8%	13	6%
RIAS	42	20%	43	21%	36	17%

WPPSI-III	35	17%	22	11%	15	7%
UNIT	23	11%	23	11%	17	8%
Students with Moderate ID						
DAS-II	123	59%	109	52%	105	50%
SB-5	69	33%	53	25%	42	20%
DP-3	64	31%	37	18%	33	16%
WISC-IV	45	22%	53	25%	49	23%
BSID-II	42	20%	22	11%	20	10%
KABC-II	34	16%	33	16%	27	13%
RIAS	33	16%	24	12%	27	13%
WISC-V	32	15%	15	7%	14	7%
UNIT	27	13%	18	9%	21	10%
CTONI-2	19	9%	23	11%	18	9%
Students with Severe ID						
DP-3	93	45%	79	38%	66	32%
BSID-II	67	32%	45	22%	39	19%
DAS-II	59	28%	60	29%	54	26%
SB-5	32	15%	29	14%	26	12%
Leiter-3	29	14%	13	6%	13	6%
CTONI-2	25	12%	28	13%	22	11%
UNIT	24	12%	23	11%	17	8%
MSEL	20	10%	11	5%	7	3%
WISC-V	7	3%	6	3%	20	10%

Current literature indicates that examiners should use caution when using accommodations and modifications during testing. There is limited research available investigating the impact of these practices on the validity and reliability of the assessment. Nonetheless, the school psychologists in this study endorsed using a variety of accommodations and modifications when testing students with ID. The three most common accommodations for students with mild ID were beginning at an earlier start point (57 percent, *n* = 119), use of a reinforcement system (56 percent, *n* = 116), and frequent repetition (54 percent, *n* = 112). These three accommodations were also the most commonly used in the assessment of students with moderate ID; however, there was variability in the frequency of use in comparison to students with mild ID: beginning at an earlier start point (59 percent, *n* = 123), use of a reinforcement system (52 percent, *n* = 109), and frequent repetition (46 percent, *n* = 96). Again, beginning at an earlier start point (46 percent, *n* = 96) and use of a reinforcement system (30 percent, *n* = 63), were among the top three for students with severe ID, but having the teacher or caregiver in the room was also common with this population of students (42 percent, *n* = 88).

To investigate the extent to which respondents' assessment practices were linked to a variety of aspects of the evaluation process, they were asked to use a four-point Likert scale to rate several items. Rating choices included "very much," "some," "not much," and "none." Most school psychologists (54 percent, *n* = 113) indicated that their assessment practices were "very much" linked with pre-assessment collaboration with professionals (e.g., occupational therapists, speech therapists, teachers) regarding students. Forty-two percent (*n* = 87) of respondents indicated that their assessment practices were "very much" linked with post-assessment collaboration with professionals. Additionally, 30 percent (*n* =

63) of respondents' assessment practices were "very much" linked with their report writing practices. On the other hand, 34 percent (n = 72) of respondents' assessment practices were only linked "some" to IEP goal/intervention recommendations, and 28 percent (n = 58) of respondents indicated that their assessment practices were only linked "some" to their post-assessment communication and/or collaboration with community resources.

A review of these survey results suggests that participants' experience with students with ID varied based on the severity level of the student's disability. With regard to direct experience, most participating school psychologists indicated that they worked with up to five students with mild ID, two or fewer students with moderate ID, and no students with severe ID during the 2014-2015 school year. With regard to choosing an assessment, there was a slight preference for a traditional, norm-referenced approach. The DAS-II, WISC-IV, SB-5, and DP-3 were ranked as the most useful cognitive assessment tools for students with a mild or moderate ID. Participating school psychologists also ranked these tools highest, along with the RIAS, when asked which tools they felt most confident administering and interpreting with the mild and moderate ID student populations. In comparison, the DP-3, BSID-II, and DAS-II were ranked as the most useful tools for students with severe ID. Participating school psychologists also indicated feeling the most confident administering and interpreting these tools with the severe ID student population. Respondents endorsed using accommodations during assessment with students with ID across all severity levels. The most commonly implemented accommodations across all ID student populations included beginning at an earlier start point, using a reinforcement system, using frequent repetition, and having a teacher or caregiver in the room.

School psychologists in this study not only felt "very much" prepared to collect data from multiple sources to plan and implement assessments with students with ID, but also to use assessment information to identify eligibility for educational services. However, participants in the current study indicated that they were only "occasionally" involved in the development of IEP goals for students with ID. Further, their assessment practices were "very much" linked to collaboration with other professionals and report writing practices, but only linked "some" to developing IEP goals/interventions and communication with community providers.

School Psychologists' Perceptions Related to Working with Students with ID

When asked about their perceptions of working with students with ID, the majority of the respondents reported feeling "extremely" (47 percent, $n = 98$) or "quite" (42 percent, $n = 88$) knowledgeable about assessing students with mild ID. Most (52 percent, $n = 109$) felt "quite" knowledgeable assessing students with moderate ID, while an almost equal majority (53 percent, $n = 110$) reported only feeling "somewhat" knowledgeable assessing students with severe ID. Only a small number ($n = 15$) indicated that they were "not at all" knowledgeable about assessing students with severe ID.

There was a similar trend with regard to perceived comfort level when assessing students with ID. Most school psychologists (59 percent, $n = 123$) felt "extremely" comfortable assessing students with mild ID and 40 percent ($n = 84$) felt "quite" comfortable assessing students with moderate ID. However, 43 percent ($n = 90$) only felt "somewhat" comfortable assessing students with severe ID. Furthermore, 14 percent ($n = 30$) reported feeling "not at all" comfortable assessing students with severe ID.

Additionally, respondents' perceived effectiveness when assessing students with ID was comparable to their perceived levels of knowledge and comfort. Forty-six percent (n = 96) reported feeling "extremely" effective assessing students with mild ID, 46 percent (n = 96) felt "quite" effective assessing students with moderate ID, and 47 percent (n = 99) felt only "somewhat" effective assessing students with severe ID. Nineteen percent (n = 40) indicated feeling "not at all" effective assessing students with severe ID.

The relationship between respondents' knowledge about assessment and their comfort level when assessing students with ID was examined using the Spearman *rho* correlation coefficient. There was a strong, significant association between the two variables for all severity levels of ID, including mild (r_s = .69, n = 193, p < .01), moderate (r_s = .70, n = 193, p < .01), and severe (r_s = .71, n = 193, p < .01), with high levels of knowledge being associated with high levels of comfort. More specifically, 81 percent (n = 156) of respondents endorsed the same rating for comfort level as they did for knowledge level for mild ID (e.g., extremely knowledgeable and extremely comfortable). Similarly, endorsement of the same ratings for comfort and knowledge level was made by 72 percent (n = 139) of respondents for students with moderate ID, and 65 percent (n = 126) of respondents for students with severe ID.

The relationship between respondents' knowledge about assessment and their perceived effectiveness when assessing students with ID was also explored. There was a strong, significant correlation between the two variables for all severity levels of ID, including mild (r_s = .63, n = 193, p < .01), moderate (r_s = .60, n = 193, p < .01), and severe (r_s = .54, n = 193, p < .01), with high levels of knowledge being associated with high levels of perceived effectiveness. Lastly, the relationship between respondents' comfort level and

their perceived effectiveness when assessing students with ID was analyzed. A strong, significant correlation was found between the two variables for students with mild (r_s = .73, n = 192, p < .01), moderate (r_s = .64, n = 192, p < .01), and severe (r_s = .66, n = 192, p < .01) ID, with high levels of comfort being associated with high levels of perceived effectiveness.

To investigate whether there were differences in the number of students with ID served by school psychologists based on their previous training experience, non-parametric tests were run for students at each level of ID severity. A Mann-Whitney U test revealed no significant difference for the number of students with ID with whom respondents had worked between those who reported that they had received specific training related to mild ID (Md = 5.0, n = 159) and those who reported that they had not received specific training related to mild ID (Md = 5.0, n = 34), U = 2718, p = .959. There was no significant difference in the number of students with whom respondents had worked between participants who reported having received specific training for moderate ID (Md = 3.0, n = 132) and those who reported that they had not received specific training related to moderate ID (Md = 2.0, n = 61), U = 3570, p = .435. There was also no significant difference in the number of students with whom respondents had worked between those who reported having received specific training for severe ID (Md = 1.0, n = 111) and those who reported that they had not received specific training related to severe ID (Md = 1.0, n = 82), U = 4194, p = .305. Table 8 presents the results of the Mann-Whitney U tests used to examine the relationship between the number of students served and previous training experience of the respondents.

Table 8

Relationship Between Number of Students Served and Previous Training Experience

	Previous ID Training Experience		No Previous ID Training Experience					
	Md	*n*	*Md*	*n*	*U*	*z*	*p*	*r*
Number of Students with Mild ID	5.0	159	5.0	34	2718	.051	.959	.004
Number of Students with Moderate ID	3.0	132	2.0	61	3570	-.780	.435	-.06
Number of Students with Severe ID	1.0	111	1.0	82	4194	-1.025	.305	-.07

To investigate whether there were differences in how frequently respondents were involved in the development of IEP goals for students with ID based on their previous training experience, further non-parametric tests were run for students at each level of ID severity. A significant difference in how frequently respondents were involved in the development of IEP goals for students with ID was found between school psychologists who reported that they had received specific training related to mild ID ($Md = 3.0$, $n = 160$) and those who reported that they had not received specific training related to mild ID ($Md = 3.5$, $n = 34$), $U = 3457.5$, $p = .008$. A significant difference in how frequently respondents were involved in the development of IEP goals for students with ID was also found between those who reported that they had received specific training related to moderate ID ($Md = 3.0$, $n =$

133) and those who reported that they had not received specific training related to moderate ID (*Md* = 3.0, *n* = 61), *U* = 4928.5, *p* = .011. There was no significant difference in how frequently respondents were involved in the development of IEP goals for students with ID between those who reported that they had received specific training related to severe ID (*Md* = 3.0, *n* = 112) and those who reported that they had not received specific training related to severe ID (*Md* = 3.0, *n* = 82), *U* = 5078, *p* = .181. Table 9 presents the results of the Mann-Whitney *U* tests used to explore the relationship between respondents' involvement in IEP goal development and previous training experience.

Table 9

Relationship Between Involvement in IEP Goal Development and Previous Training Experience

	Previous ID Training Experience		No Previous ID Training Experience					
	Md	*n*	*Md*	*n*	*U*	*z*	*p*	*r*
Mild ID	3.0	160	3.5	34	3457.5	2.637	.008**	.19
Moderate ID	3.0	133	3.0	61	4928.5	2.553	.011*	.18
Severe ID	3.0	112	3.0	82	5078	1.337	.181	.10

*$p < .05$. **$p < .01$.

Lastly, non-parametric tests were run to investigate differences between self-rated perceptions of school psychologists based on their previous training experience. There were significant differences in school psychologists' perceived levels of knowledge, comfort, and effectiveness when assessing students with ID across the severity levels of moderate and

severe ID based on previous training experience. No significant difference between previous training experience statuses was found for these perceptions with students with mild ID.

Table 10 presents the results from the non-parametric tests run to investigate the relationship between respondents' perceptions and previous training experience.

Table 10

Relationship Between Respondent Perceptions and Previous Training Experience

Student Population	Previous ID Training Experience		No Previous ID Training Experience					
	Md	*n*	*Md*	*n*	*U*	*z*	*p*	*r*
Working with Students with mild ID								
Participant Perceived Knowledge	1.0	160	2.0	34	2903	.698	.485	.05
Participant Perceived Comfort	1.0	160	1.0	33	2885	.997	.319	.07
Participant Perceived Effectiveness	1.5	160	2.0	33	2698	.222	.824	.02
Working with Students with moderate ID								
Participant Perceived Knowledge	2.0	133	2.0	61	4827.5	2.369	.018*	.17
Participant Perceived Comfort	2.0	133	2.0	60	4670.5	2.036	.042*	.15
Participant Perceived	2.0	133	2.0	60	4310	.966	.334	.07

Effectiveness								
Working with Students with severe ID								
Participant Perceived Knowledge	3.0	112	3.0	82	6156.5	4.535	.000***	.33
Participant Perceived Comfort	3.0	112	3.0	81	5504.5	2.700	.007**	.19
Participant Perceived Effectiveness	3.0	112	3.0	81	5507.5	2.761	.006**	.20

*$p < .05$. **$p < .01$. ***$p < .001$

When asked to consider the current ID eligibility process in North Carolina public schools, respondents indicated that the process was challenging for a variety of reasons. The most common reasons included: too much emphasis on standardized assessment (46 percent, $n = 96$), too little support for a functional assessment approach (42 percent, $n = 88$), too little training in the topic area (37 percent, $n = 77$), and too little support for a developmental assessment approach (32 percent, $n = 67$). Some additional reasons were also indicated by fewer respondents including: available tools on the market were not useful (18 percent, $n = 38$), no access to useful tools within practicing district (9 percent, $n = 18$), and the NCDPI definition of ID was not aligned with that of the DSM-5 (8 percent, $n = 16$). Slightly less than seven percent ($n = 14$) of the participants indicated that they did not believe the current process was challenging. Specific comments provided by respondents revealed other concerns with the process, including procedural issues (e.g., confusing language in eligibility documents) and service delivery (e.g., inappropriate expectations for students).

In summary, results related to participants' self-rated perceptions revealed that school psychologists generally felt most knowledgeable, comfortable, and effective working with students with mild ID and the least knowledgeable, comfortable, and effective with students with severe ID. These findings were supported by correlational analyses. An examination of the relationships between previous training experience and a variety of assessment practices revealed that previous training experience specific to the ID population did not have a significant association with the number of students with ID with whom participants had worked in the 2014-2015 school year. However, participants who had received training specific to either mild ID or moderate ID were more frequently involved in the development of IEP goals for these students, but not for students with severe ID. Lastly, participants' perceptions of feeling knowledgeable, comfortable, and effective during assessment with students with a moderate or severe ID were significantly linked to previous training experience. This relationship was strongest for students with severe ID.

Discussion

Equipped with training in both education and psychology, school psychologists are uniquely qualified to provide direct comprehensive services to meet the educational, behavioral, social-emotional, and mental health needs of all students. This involves conducting cognitive assessments and analyzing the resulting data to assist in determining students' eligibility for special education services. Assessment practices with students with ID become increasingly challenging as their needs become more complex. This study aimed to clarify some of these challenging aspects of a school psychologist's role, particularly relating to the identification of tools appropriate for assessing students' cognitive abilities.

Status and Range of Previous Training Related to ID

Three main research questions were investigated in this study of the practices of school psychologists in North Carolina with students with ID. The first research question examined the status and range of school psychologists' previous training specific to the ID student population. This question was explored using descriptive statistics in the form of frequency counts to measure previous participation in training and the types of training received. School psychologists in this study indicated participating in general continuing education activities only some of the time, with the main reason being to keep up with assessment practices. The specific training experiences of participants working with students with ID were indirectly related to the severity level of the ID. Specifically, training in the area of severe ID was much less common among participants compared to training in the area of mild ID. Furthermore, training experience was most often obtained while participants were in graduate school. This brings into question why training experience beyond graduate school was limited among participating school psychologists. For example, did the school psychologists not take advantage of available training opportunities, or were training opportunities limited after graduate school? The fact that there are about 17,000 students across the state served under the special education eligibility area of ID reinforces the need for school psychologists to be trained to work with this population (NCDPI, 2015a). Training related to working with students with ID should be an area of increased emphasis across the state. Such training could take the forms of webinars, conferences, or presentations addressing the issues identified in this study.

Nature of Current Practices Related to Students with ID

Descriptive statistics were also used to address the second research question about the nature of current school-based school psychologists' practices as they related to working with students with ID. The amount of work experience with students with ID varied depending on the severity level of ID. More specifically, most participating school psychologists indicated that they worked with five or fewer students with mild ID, two or fewer students with moderate ID, and no students with severe ID during the 2014-2015 school year. While this is not too surprising given the incidence rate of ID, it does raise the question of which school psychologists are primarily serving students with ID. Are there particular school psychologists in most districts who primarily serve this population of students? If not, should all school psychologists be prepared to serve all severity levels of ID across multiple age groups? This is an important consideration since 74 percent of the school psychologists surveyed indicated that they primarily served more than one age group during the 2014-2015 school year.

With regard to selecting assessment measures to administer to students with ID, most school psychologists preferred a traditional, norm-referenced approach, which is consistent with the literature. However, as some researchers have maintained, the highly preferred measures used today may not be the most appropriate tools for the ID population; rather, a more functionally- and behaviorally-based assessment measure could likely better inform intervention services (Crepeau-Hobson & Vujeva, 2012b; Drew & Hardman, 2007; Zucker & Polloway, 2004). Flanagan et al. (2008) argue for a best practice approach to cognitive assessment, which is based on the utilization of a systematic, comprehensive assessment and interpretation framework that integrates sound theoretical and psychometric principles.

The DAS-II, WISC-IV, and SB-5 were ranked as the most useful cognitive assessment tools for students with mild or moderate ID, which is consistent with best practice literature (Crepeau-Hobson & Vujeva, 2012b; Sattler, 2008; Wechsler, 2014). School psychologists participating in this study also ranked these tools highest when asked which tools they felt most confident administering to and interpreting with the mild and moderate ID student populations. In comparison, the DP-3, BSID-II, and DAS-II were ranked as the most useful tools for students with severe ID, which is somewhat consistent with the literature showing that a developmental approach is most common for those with severe ID (Riccio et al., 1998). Participating school psychologists also indicated feeling the most confident administering and interpreting these tools with students with severe ID.

Due to the high prevalence of co-occurring conditions and limitations in students with ID, particularly those with moderate to profound impairment, it is crucial that assessment tool selection is individualized and takes a number of issues into consideration. These issues include: 1) the examiner's level of competence and experience (Simeonsson et al, 1995), 2) any psychometric problems that could arise as a result of a student being administered a particular tool that could inadvertently penalize them for having a physical or other type of impairment (AAIDD, 2010; APA, 2013; Brock, 2012; Crepeau-Hobson & Vujeva, 2012a; Kranzler & Floyd, 2013; Sattler, 2008), and 3) the test's norming sample, which could lead to floor effects (Colmar et al., 2006; Crepeau-Hobson & Vujeva, 2012a).

The above complications may be why respondents endorsed using a variety of accommodations during assessment with students with ID across all severity levels. The most commonly implemented accommodations for the mild and moderate ID student populations included beginning at an earlier start point, using a reinforcement system, and

using frequent repetition. Beginning at an earlier start point, using a reinforcement system, and having a teacher or caregiver in the room were the most commonly used accommodations for students with severe ID. While accommodations may be common, school psychologists should use caution when breaking standardization during administration, as little research has examined the actual impact of accommodations on test reliability and validity (Crepeau-Hobson & Vujeva, 2012a).

School psychologists in this study not only felt "very much" prepared to collect data from multiple sources to plan and implement assessments with students with ID, but also to use assessment information to identify eligibility for educational services. Participants in the current study indicated that they were only "occasionally" involved in the development of IEP goals for students with ID, so their assessment practices were only linked "some" to IEP goal/intervention recommendations; however, their assessment practices were "very much" linked with pre- and post-assessment collaboration with other professionals regarding the student.

Although school psychologists indicated a strong assessment role in the schools, there was not a strong link between their assessment practices with students with ID and their contributions to IEP goals and interventions. This was a surprising finding, as researchers have maintained that the most important purpose of cognitive assessment is to inform decisions about individualizing interventions (Drew & Hardman, 2007; Flanagan et al., 2008; Zucker & Polloway, 2004). This raises many questions, such as do school psychologists see the utility value of their assessments, and are school psychologists selecting appropriate measures that will yield useful information for goal and intervention development?

School Psychologists' Perceptions Related to Working with Students with ID

The third research question examined relationships between self-ratings of practice as a function of severity of ID of students. Findings supported by correlational analyses revealed that school psychologists generally felt most knowledgeable, comfortable, and effective working with students with mild ID and the least knowledgeable, comfortable, and effective with student with severe ID.

An examination of the relationships between previous training experience and a variety of assessment practices revealed that previous training experience specific to the ID population did not have a significant association with the number of students with ID with whom participants had worked in the 2014-2015 school year. This finding could suggest that previous training experience may not be taken into consideration when assigning school psychologists to schools with higher ID student populations. However, participants who had received training specific to either mild ID or moderate ID were more frequently involved in the development of IEP goals for these students, but not for students with severe ID. Lastly, it was found that participants' perceptions of feeling knowledgeable, comfortable, and effective during assessment with students with moderate or severe ID were significantly linked to previous training experience and this relationship was strongest for students with severe ID. This raises the question of how school psychologists who primarily serve students with a moderate or severe ID are selected for these roles in their districts, and if this decision takes training experience into account. Furthermore, given that those with training experience have higher self-rated perceptions, perhaps this should be part of the basis for selecting which school psychologists serve these student populations across the state. Given that so many school psychologists find the state's current special education eligibility process

challenging for students with ID, maybe additional training is the answer to ensuring that school psychologists feel more knowledgeable, comfortable, and effective.

Limitations

Given the exploratory nature of the study, a number of factors may limit conclusions about the roles and practices of school psychologists with students with ID. First, although the current study survey response rate of 28 percent was above the 10-25 percent response rate common for web-based surveys, there are additional design features that could have increased the response rate (Sauermann & Roach, 2013). Some of these proven strategies were utilized in the current study, including lottery incentive and survey reminders (Sauermann & Roach, 2013). However, it is possible that, because the current survey tool was based on self-report and voluntary, the results may not reflect a representative estimate of the practices and opinions of the current North Carolina school-based school psychologist workforce. Other methods of data collection, such as telephone or face-to-face interview, may have yielded a higher response rate from school psychologists.

Survey research, in general, has inherent challenges, including room for error because respondents are relying on their own recollections and estimates and the potential for social desirability effects (Tourangeau, Rips, & Rasinski, 2000). Additional forms of data collection, in addition to a survey, could provide a more comprehensive view of school psychologists' practices and may help eliminate the potential for bias. Another limitation of the current study relates to some questions in the survey being limited in scope. More specific questions delving into the basis for school psychologists' selection of cognitive tools, as well as questions regarding the assessment of adaptive skills would have yielded more precise information.

Conclusions

Overall, the findings from this study indicate that the assessment of students, in general and with students with ID, is a major activity of school psychologists. School psychologists' practices with this population align with the literature with regard to tool selection across severity levels of ID. They also reported feeling well prepared to collect data and collaborate with related service professionals throughout the assessment process. The role of assessing students with ID, however, varies among current professionals in the field. Ratings related to how knowledgeable, comfortable, and effective they felt about assessing students with ID differed depending on the level of ID severity of the student.

In addition, this research outlines concerning areas in the field of ID assessment in North Carolina public schools. Additional training is needed by practicing school psychologists, particularly training related to working with students with moderate or severe ID. The importance of linking information gathered during assessment to IEP goals and interventions and improving collaboration with community providers about students should be priorities for training. Thus, future research is needed that investigates whether follow-up training to address identified knowledge and skill needs of school psychologists actually has a positive impact on practices and perceptions.

Most of the participants in this study reported receiving training in their graduate training programs, with little follow-up continuing education in this topic area. A more definitive assessment of which specific type of training(s) school psychologists believe they need is necessary. In particular, would they prefer more in-depth training at the graduate level, training in the form of local in-services, or training that is offered in conference presentations or in workshops throughout their professional careers? With the provision of

training, studies are needed to evaluate the effectiveness of the training on improving future practices of school psychologists. Future research should identify needed areas of graduate-level training specific to the ID student population. Research is also needed to investigate what changes in academic programs are needed for training graduate students about assessment with the ID student population that could potentially improve current practices and perceptions. For example, should training programs incorporate more in-person training experiences, or would a specific course be sufficient? Starting such teaching and training experiences early on in school psychologists' careers is essential to improve assessment practices with students with ID in the schools.

A thorough overview of the topic of the disproportionality of minority students being identified under the IDEA eligibility area of ID was beyond the scope of this study; however, there is significant concern surrounding this topic in North Carolina. Future research that delves into the complexities of assessing and making eligibility decisions about North Carolina students with ID and those who are members of minority groups is warranted. An analysis of school psychologists' culturally-responsive practices as they relate to working with students from culturally- and linguistically-diverse backgrounds is an approach currently recommended by researchers (Harry & Klingner, 2014; Jasper & Bouck, 2013).

Furthermore, there are a number of questions for future research to investigate why current assessment practices are not regularly linked to the development of IEP goals and interventions for students with ID. Do school psychologists feel new tools should be developed that will yield more useful information that could inform goals and interventions, do school psychologists not feel adequately trained to make this link, or is there some other explanation for the disconnect between assessment results and recommended interventions?

Additionally, how aware are current school psychologists of evidence-based practices for assessing students with ID? Since there is such a high rate of comorbidity with autism spectrum disorder, future research evaluating assessment practices with this student population may also yield information about what particular types of training are needed across the state related to assessment. Do school psychologists' practices differ when working with students with an autism spectrum disorder, compared to ID, and do they rate themselves as feeling more knowledgeable, comfortable, and effective with that student population?

A large majority of the respondents in this study indicated that they believe the current special education eligibility process in North Carolina is challenging for several reasons, including too little training in the topic area, too much emphasis on standardized assessment, too little support for a functional assessment approach, and too little support for a developmental assessment approach. They also commented about other hindrances to the process (e.g., procedural issues, expectations). Conducting an in-depth follow-up procedure with school psychologists in the field may be helpful to NCDPI policymakers so a more appropriate eligibility process for the state can be considered. Future research is needed to investigate the pros and cons of alternative eligibility processes. Perhaps a collaborative effort with professionals working in clinical settings who primarily serve individuals with ID may be a solution. Education policymakers should weigh the pros and cons of changing ID special education eligibility criteria to include an increased emphasis on adaptive skills, as is the case in clinical settings.

This study identified trends in the current assessment practices of school-based school psychologists in North Carolina related to working with students with ID. Specific areas of strength recognized in this study included appropriate selection of assessment tools across ID severity levels; self-rated feelings of preparedness to collect data and collaborate with related service professionals regarding the assessment of students with ID; and generally high perceived levels of knowledge, comfort, and effectiveness when assessing students with mild ID.

Specific areas of weakness were identified related to limited training in the area of ID assessment after graduate school; weak links between assessment practices and other aspects of the evaluation process; decreased levels of perceived knowledge, comfort, and effectiveness as ID severity level increases; and recognition of challenges associated with the current NCDPI ID eligibility determination process.

The findings in this study have implications for training on knowledge, skills, and perceptions of school psychologists to enhance their practices with students with ID. Such training should address the complexities of assessing students to determine ID eligibility, especially those belonging to minority groups, and improve weak links between assessment practices and other aspects of the evaluation process. The training of school psychologists is important to advance effective educational policies and practices for students with ID and to promote best practices by school-based practitioners.

APPENDIX A

Introduction to Survey

Dear Fellow School Psychologist,

I am a school psychology doctoral student at UNC – Chapel Hill and former practicing school psychologist for North Carolina public schools. As part of my doctoral dissertation, I am investigating school psychologists' assessment practices with students with suspected intellectual disabilities. I am requesting your voluntary and anonymous participation in the current study.

If you decide to take part in this study, participation involves the completion of a brief survey (link provided below). The survey contains items that ask about your general demographic information and school psychology practices, as well as your practices specific to assessing students with intellectual disabilities. Should you choose to participate, please complete this survey by 5pm on April 27, 2015.

Completion of the survey should take 10 to 15 minutes. You will not provide your name as part of the survey, so your responses will be anonymous. Completing the survey implies your consent to participate in the study. Should you choose to provide your name and contact information to participate in the optional lottery for a chance to win one of six $25 Visa gift cards, your name and contact information will be kept in a separate data file and will not be linked to your survey responses.

Please allow me to thank you in advance for your participation, as it enables me to obtain an acceptable response rate for the completion of my dissertation project. Results of this study will be available upon request, and questions and comments may be directed to me at:

Ashley N. Costner, School Psychology Doctoral Candidate
UNC at Chapel Hill, School of Education
105 Peabody Hall, CB# 3500
Chapel Hill, NC 27599
acostner@live.unc.edu
919-843-1904

Survey link: **(link will be inserted here)**

Thank you for your time.

Sincerely,
Ashley N. Costner

Should you choose to participate, please complete this survey by 5pm April 27, 2015.

APPENDIX B

North Carolina School-Based School Psychologists Assessment Practices Survey

Survey Introduction

Dear Fellow School Psychologist,

I am a school psychology doctoral student at UNC - Chapel Hill and former practicing school psychologist for North Carolina public schools. In recognition of the challenges facing school psychologists regarding the appropriate assessment and identification of students with intellectual disabilities, I am investigating school-based school psychologists' assessment practices with this population of students for my doctoral dissertation project. I am requesting your voluntary and anonymous participation in the current study.

If you decide to take part in this study, participation involves the completion of this brief survey. The survey contains items that ask about your general demographic information and school psychology practices, as well as your practices specific to assessing students with intellectual disabilities. The survey is for current school-based school psychologists employed by a North Carolina Local Education Agency (LEA). Should you choose to participate, please complete this survey by 5pm on May 1, 2015.

Completion of the survey should take around 20 minutes. Please note that the survey is best viewed on a desktop or laptop computer. You are not required to provide your name as part of the survey, so your responses will be anonymous. Completing the survey implies your consent to participate in the study. Should you choose to provide your name and contact information to participate in the optional lottery for a chance to win one of six $25 Visa gift cards, your name and contact information will be kept in a separate data file and will not be linked to your survey responses.

Please allow me to thank you in advance for your participation, as it enables me to obtain an acceptable response rate for the completion of my dissertation project. It is my intention that this project will lend guidance toward improving consistency of practice in the appropriate assessment and identification of students with intellectual disabilities. Results of this study will be available upon request, and questions and comments may be directed to me at:

Ashley N. Costner, School Psychology Doctoral Candidate
UNC at Chapel Hill, School of Education
105 Peabody Hall, CB# 3500
Chapel Hill, NC 27599
acostner@live.unc.edu
919-843-1904

Thank you for your time.

Sincerely,
Ashley N. Costner

DEADLINE EXTENDED
Should you choose to participate, please complete this survey by 5pm on May 1, 2015.

- ☐ I consent and want to participate
- ☐ I do not want to participate

I. Current Work Practice and Role

Please indicate your gender:

- Male
- Female

Please indicate your ethnicity:

- African American
- Caucasian
- Hispanic
- Native American
- Asian
- Multi-Ethnic
- Pacific Islander
- Middle Eastern
- Other

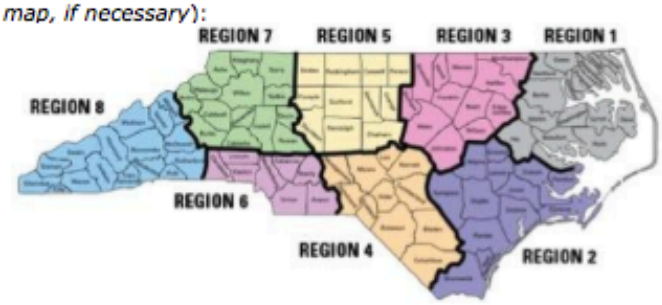
Please indicate your current work setting:

- Public School
- Private School
- Charter School
- Other

Please indicate your current employment status with the work setting you selected for the previous question:

- Full-time 12-month employee
- Full-time 10-month employee
- Contract employee
- Part-time employee
- Other

Please indicate in which NC Department of Public Instruction (DPI) region you work (*refer to the map, if necessary*):



- Region One
- Region Two
- Region Three
- Region Four
- Region Five
- Region Six
- Region Seven
- Region Eight

Please indicate your highest degree earned:

- Specialist
- Doctorate
- Other

Please indicate the year of your highest degree earned:

- Before 1970
- 1971-1980
- 1981-1990
- 1991-2000
- 2001-2010
- 2011-2014

Please indicate any current licenses and/or credentials that you hold (*check all that apply*):

- ☐ DPI School Psychologist License
- ☐ National Certification (NCSP)
- ☐ Licensed Psychological Associate (LPA)
- ☐ Licensed Psychologist (LP)
- ☐ Health Services Provider (HSP)
- ☐ DPI Approved Provider (TBI)
- ☐ DPI Teaching License
- ☐ Board Certified Behavior Analyst (BCBA)
- ☐ Other

Please indicate your years of experience as a school psychologist (excluding internship):

- ⁝ 0-5
- ⁝ 6-10
- ⁝ 11-15
- ⁝ 16-20
- ⁝ 21-25
- ⁝ 26-30
- ⁝ 30+

Please indicate the age group(s) that you primarily serve (*check all that apply*):

- ☐ 0-5 years (Pre-kindergarten)
- ☐ 6-11 years (Elementary)
- ☐ 12-14 years (Middle/Intermediate)
- ☐ 15-21 years (High School/Transition)

Please drag and drop the following activities to rank them from 1 to 4 according to the amount of time you have spent performing each so far during the 2014-2015 school year (1 represents the most amount of time):

- Counseling students
- Consulting with staff and parents
- Leading professional development
- Conducting assessments/testing

How frequently do you participate in continuing education/professional development for school psychologists?

- ☐ Never
- ☐ Rarely
- ☐ Sometimes
- ☐ Often

For what purpose(s) do you participate in continuing education/professional development (*check all that apply*)?

- ☐ Required by the North Carolina Department of Public Instruction (NCDPI)
- ☐ Required by district/school system
- ☐ To keep up with assessment practices
- ☐ To keep up with intervention practices
- ☐ To keep up with state policies/procedures
- ☐ To meet licensure continuing education requirements
- ☐ Other(s)

Please indicate if you are a current member of any of the following organizations (*check all that apply*):

- ☐ North Carolina School Psychology Association (NCSPA)
- ☐ National Association of School Psychologists (NASP)
- ☐ American Psychological Association (APA)
- ☐ Other(s)

II. General Assessment Practices

Please drag and drop the following types of assessment to rank them from 1 to 5 according to the amount of time you have spent administering each so far during the 2014-2015 school year (1 represents the most amount of time):

- Social emotional
- Cognitive
- Curriculum-based
- Educational/achievement
- Adaptive

Please drag and drop the following test attributes to rank them from 1 to 3 according to how much they factor into your decision of which test(s) to administer to students (1 represents the attribute that factors into your decision the most):

- Normative group (i.e., the population sample on which the test was normed)
- Convenience of administration (e.g., administration time, ease of scoring)
- Psychometric properties (e.g., validity and reliability)

III. Understanding and Familiarity with Students with Intellectual Disabilities

Please note, for the purposes of this survey, the following NC Department of Public Instruction definitions* of a mild, moderate, or severe intellectual disability should be used when responding to questions:

- A mild intellectual disability refers to intellectual functioning at two standard deviations below the mean plus or minus the standard error of measure on an individually administered standardized intelligence test
- A moderate intellectual disability refers to intellectual functioning at three standard deviations below the mean plus or minus the standard error of measure on an individually administered standardized intelligence test
- A severe intellectual disability refers to intellectual functioning at four or more standard deviations below the mean plus or minus the standard error of measure on an individually administered standardized intelligence test

*Adaptive behavior deficits are not the focus of this study, so they have been removed from these definitions.

Have you ever received training specific to students with intellectual disabilities in the specified severity ranges? Examples of training may include a graduate school course, conference presentations, workshops, or a specialized practicum experience.

	Yes	No
Students with Mild Intellectual Disabilities	☐	☐
Students with Moderate Intellectual Disabilities	☐	☐
Students with Severe Intellectual Disabilities	☐	☐

What kind(s) of training have you received specific to students with mild intellectual disabilities (*check all that apply*)?

- ☐ Graduate school course(s)
- ☐ Conference presentation/session
- ☐ Local district training
- ☐ Workshop
- ☐ A specialized practicum/internship experience (please enter name of site)
- ☐ Other

What kind(s) of training have you received specific to students with moderate intellectual disabilities (*check all that apply*)?

- ☐ Graduate school course(s)
- ☐ Conference presentation/session
- ☐ Local district training
- ☐ Workshop
- ☐ A specialized practicum/internship experience (please enter name of site)
- ☐ Other

What kind(s) of training have you received specific to students with severe intellectual disabilities (*check all that apply*)?

- ☐ Graduate school course(s)
- ☐ Conference presentation/session
- ☐ Local district training
- ☐ Workshop
- ☐ A specialized practicum/internship experience (please enter name of site)
- ☐ Other

Please indicate the approximate number of students falling in the listed severity ranges with whom you have worked in the school setting so far during the 2014-2015 school year:

Students with Mild Intellectual Disabilities	
Students with Moderate Intellectual Disabilities	
Students with Severe Intellectual Disabilities	

How frequently are you involved in the development of IEP goals for students who have intellectual disabilities in your district?

- ⁝ Very Often
- ⁝ Often
- ⁝ Occasionally
- ⁝ Rarely
- ⁝ Never

IV. Assessment Practices for Students with Intellectual Disabilities

Please indicate how knowledgeable you feel about assessment with the following populations:

	Extremely	Quite	Somewhat	Not at All
Students with Mild Intellectual Disabilities	☐	☐	☐	☐
Students with Moderate Intellectual Disabilities	☐	☐	☐	☐
Students with Severe Intellectual Disabilities	☐	☐	☐	☐

Please indicate how comfortable you feel when assessing the following populations:

	Extremely	Quite	Somewhat	Not at All
Students with Mild Intellectual Disabilities	☐	☐	☐	☐
Students with Moderate Intellectual Disabilities	☐	☐	☐	☐
Students with Severe Intellectual Disabilities	☐	☐	☐	☐

Please indicate how effective you feel when assessing the following populations (i.e., how likely do you feel that you are getting valid results):

	Extremely	Quite	Somewhat	Not at All
Students with Mild Intellectual Disabilities	☐	☐	☐	☐
Students with Moderate Intellectual Disabilities	☐	☐	☐	☐
Students with Severe Intellectual Disabilities	☐	☐	☐	☐

Please drag and drop the following assessment approaches to rank them from 1 to 4 according to how well they align with your understanding of how students with intellectual disabilities should be assessed (1 being the most aligned with your understanding):

- Functional approach (i.e., a tool which emphasizes functional skills)
- Traditional, norm-referenced approach (e.g., standardized cognitive assessment)
- Proxy approach (e.g., a parent or caregiver completes a form or interview)
- Developmental approach (i.e., a tool which emphasizes skills following a developmental progression)

The next three questions will ask about the cognitive assessment tools that you believe are the most useful for assessing students with intellectual disabilities (i.e., the tools that provide the most meaningful information).

Please drag and drop the three cognitive assessment tools that you believe are the most useful for assessing students with mild intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most useful):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Mild Intellectual Disabilities (Pre-Kindergarten)
Students with Mild Intellectual Disabilities (Elementary)
Students with Mild Intellectual Disabilities (Middle/Intermediate)
Students with Mild Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you believe are the most useful for assessing students with moderate intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most useful):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Moderate Intellectual Disabilities (Pre-Kindergarten)
Students with Moderate Intellectual Disabilities (Elementary)
Students with Moderate Intellectual Disabilities (Middle/Intermediate)
Students with Moderate Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you believe are the most useful for assessing students with severe intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most useful):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Severe Intellectual Disabilities (Pre-Kindergarten)
Students with Severe Intellectual Disabilities (Elementary)
Students with Severe Intellectual Disabilities (Middle/Intermediate)
Students with Severe Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

The next three questions will ask about the cognitive assessment tools that you feel the most confident administering to students with intellectual disabilities.

Please drag and drop the three cognitive assessment tools that you feel the most confident administering to students with mild intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Mild Intellectual Disabilities (Pre-Kindergarten)
Students with Mild Intellectual Disabilities (Elementary)
Students with Mild Intellectual Disabilities (Middle/Intermediate)
Students with Mild Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you feel the most confident administering to students with moderate intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Moderate Intellectual Disabilities (Pre-Kindergarten)

Students with Moderate Intellectual Disabilities (Elementary)

Students with Moderate Intellectual Disabilities (Middle/Intermediate)

Students with Moderate Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you feel the most confident administering to students with severe intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
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Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Severe Intellectual Disabilities (Pre-Kindergarten)
Students with Severe Intellectual Disabilities (Elementary)
Students with Severe Intellectual Disabilities (Middle/Intermediate)
Students with Severe Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

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Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

The next three questions will ask about the cognitive assessment tools that you feel the most confident interpreting after assessing students with intellectual disabilities.

Please drag and drop the three cognitive assessment tools that you feel the most confident interpreting after assessing students with mild intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Mild Intellectual Disabilities (Pre-Kindergarten)
Students with Mild Intellectual Disabilities (Elementary)
Students with Mild Intellectual Disabilities (Middle/Intermediate)
Students with Mild Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you feel the most confident interpreting after assessing students with moderate intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Moderate Intellectual Disabilities (Pre-Kindergarten)
Students with Moderate Intellectual Disabilities (Elementary)
Students with Moderate Intellectual Disabilities (Middle/Intermediate)
Students with Moderate Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please drag and drop the three cognitive assessment tools that you feel the most confident interpreting after assessing students with severe intellectual disabilities into the box for the age group that you primarily serve AND rank them from 1 to 3 (1 being the most confident):

Items
Bayley Scales of Infant Development, Second Edition (BSID-II)
Cognitive Assessment System (CAS)
Comprehensive Test of Nonverbal Intelligence, Second Edition (CTONI-2)
Detroit Tests of Learning Aptitude, Fourth Edition (DTLA-4)
Developmental Profile, Third Edition (DP3)
Differential Ability Scales, Second Edition (DAS-II)
Kaufman Adolescent and Adult Intelligence Test (KAIT)
Kaufman Assessment Battery for Children-Second Edition (KABC-II)
Kaufman Brief Intelligence Test, Second Edition (KBIT-2)
Leiter International Performance Scale, Revised (Leiter-R)
Leiter International Performance Scale, Third Edition (Leiter-3)
Mullen Scales of Early Learning (MSEL)
Pictoral Test of Intelligence, Second Edition (PTI-2)
Raven's Progressive Matrices
Reynolds Intellectual Assessment Scales (RIAS)
Stanford-Binet Intelligence Scales, Fifth Edition (SB5)

Students with Severe Intellectual Disabilities (Pre-Kindergarten)

Students with Severe Intellectual Disabilities (Elementary)

Students with Severe Intellectual Disabilities (Middle/Intermediate)

Students with Severe Intellectual Disabilities (High School/Transition)

Test of Nonverbal Intelligence, Fourth Edition (TONI-4)

Universal Nonverbal Intelligence Test (UNIT)

Wechsler Abbreviated Scale of Intelligence (WASI)

Wechsler Adult Intelligence Scale, Third Edition (WAIS-III)

Wechsler Intelligence Scale for Children, Fifth Edition (WISC-V)

Wechsler Intelligence Scale for Children, Fourth Edition (WISC-IV)

Wechsler Preschool and Primary Scale of Intelligence, Third Edition (WPPSI-III)

Wide Range Intelligence Test (WRIT)

Woodcock-Johnson Tests of Cognitive Abilities, Fourth Edition (WJ-IV COG)

Woodcock-Johnson Tests of Cognitive Abilities, Third Edition (WJ-III COG)

Other

Other

Other

Please select the three most common accommodations or modifications, if any, that you provide when testing students with mild intellectual disabilities:

- ☐ Use of reinforcement system
- ☐ Elimination of timing component
- ☐ Frequent repetition
- ☐ Enlargement of print
- ☐ Teacher or caregiver in room
- ☐ Beginning at earlier start point
- ☐ Use of unaided communication systems (e.g., gestures, sign language)
- ☐ Use of aided communication device (e.g., communication board or device)
- ☐ Other
- ☐ Other
- ☐ Other

Please select the three most common accommodations or modifications, if any, that you provide when testing students with moderate intellectual disabilities:

- ☐ Use of reinforcement system
- ☐ Elimination of timing component
- ☐ Frequent repetition
- ☐ Enlargement of print
- ☐ Teacher or caregiver in room
- ☐ Beginning at earlier start point
- ☐ Use of unaided communication systems (e.g., gestures, sign language)
- ☐ Use of aided communication device (e.g., communication board or device)
- ☐ Other
- ☐ Other
- ☐ Other

Please select the three most common accommodations or modifications, if any, that you provide when testing students with severe intellectual disabilities:

- ☐ Use of reinforcement system
- ☐ Elimination of timing component
- ☐ Frequent repetition
- ☐ Enlargement of print
- ☐ Teacher or caregiver in room
- ☐ Beginning at earlier start point
- ☐ Use of unaided communication systems (e.g., gestures, sign language)
- ☐ Use of aided communication device (e.g., communication board or device)
- ☐ Other
- ☐ Other
- ☐ Other

To what extent are your assessment practices with students with intellectual disabilities linked to the following aspects of the evaluation process:

	Very Much	Some	Not Much	None
Your pre-assessment collaboration with other professionals (e.g., occupational therapist, speech therapist, teacher) regarding the student	☐	☐	☐	☐
Your report writing practices	☐	☐	☐	☐
Your IEP goal/intervention recommendations	☐	☐	☐	☐
Your post-assessment collaboration with other professionals regarding the student (e.g., related services)	☐	☐	☐	☐
Your post-assessment communication and/or collaboration with community resources (e.g., referrals)	☐	☐	☐	☐

Please indicate the extent to which you feel prepared to engage in the following assessment activities with students with intellectual disabilities:

	Very Much	Some	Not Much	None
Collecting data from multiple sources when planning and implementing assessments	☐	☐	☐	☐
Conducting comprehensive assessments to identify eligibility for educational services	☐	☐	☐	☐
Using assessment data to recommend evidence-based interventions	☐	☐	☐	☐
Consulting and collaborating at the individual, family, and systems level about the student	☐	☐	☐	☐
Using current research on learning and cognition to develop appropriate IEP goals	☐	☐	☐	☐

V. Comments/Concerns for Future Research and Professional Development

Do you believe the current assessment process for students with intellectual disabilities in NC public schools is challenging, and if so, why (i.e., what do you perceive as challenging in this process) (*check all that apply*)?

- ☐ Too little training in this area for school-based school psychologists
- ☐ Too much emphasis on standardized assessment
- ☐ Too little support for a functional approach to assessment
- ☐ Too little support for a developmental approach to assessment
- ☐ NCDPI definition is not aligned with DSM-5 definition
- ☐ Available tools on the market are not useful
- ☐ I do not have access to useful tools in my district
- ☐ Other(s)
- ☐ I do not believe the current assessment process is challenging

Please list recommendations you have, if any, for improving the current assessment process for students with intellectual disabilities in North Carolina public schools (i.e., what could be done to make the process less challenging and/or more appropriate?):

Are you interested in accessing and/or utilizing resources specific to the practice of assessing students with intellectual disabilities in the schools, and if so, which resource(s) (*check all that apply*)?

- ☐ Executive summary or abstract of this research study upon its completion
- ☐ Presentation at a North Carolina School Psychology Association (NCSPA) Conference
- ☐ Webinar discussing recommended practices
- ☐ Other(s)
- ☐ I am not interested

Please use the space below to share any comments and/or concerns you have regarding students with intellectual disabilities:

VI. Survey Submission

You have now finished the survey. If you would like to submit your responses, please click on the "Next" button below. After your responses are submitted, you will be given the option to participate in a lottery for a chance to win one of six $25 Visa gift cards. You will be asked to provide your name, address, and email and/or telephone number. Your survey responses will in no way be connected to your contact information. Winners will be randomly selected and notified once all data has been collected. If you have any questions, please feel free to contact me using the information listed below. Thank you for your time and participation.

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919-843-1904

VII. Lottery Participation

To participate in the lottery for a chance to win one of six $25 Visa gift cards, please enter your name, address, and email and/or telephone number. Your survey responses will in no way be connected to your contact information. Winners will be randomly selected and notified once all data has been collected. Thank you and good luck!

First Name	
Last Name	
Mailing Address	
Email Address	
Phone Number	

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